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OUTBREAK AND SUPPRESSION OF PLAGUE IN PORTO RICO.

AN ACCOUNT OF THE COURSE OF THE EPIDEMIC AND THE MEASURES EMPLOYED FOR ITS SUPPRESSION BY THE UNITED STATES PUBLIC HEALTH SERVICE.

By RICHARD H. CREEL, Passed Assistant Surgeon, United States Public Health Service.

[Continued from Public Health Reports, May 30, 1913.]

Eradicative Measures Outside of San Juan.

CAROLINA.

In the latter part of June human plague cases occurred in the town of Carolina, a small village about 14 miles from San Juan.

On June 26 a case, clinically positive, was reported. The patient died on June 27. On June 28 another death from plague occurred in the barrio of Loiza, some 3 or 4 miles distant from Carolina on the side of town opposite from San Juan. The residence in which he had developed symptoms and died was a small shack out on the hills, well elevated and far removed from other habitations. Investigation revealed the fact that the man had been in Carolina overnight on June 22 and had slept in a house where subsequently "Case 3, Carolina," developed its infection. This case was confirmed by animal inoculation July 5. The third and last case of plague in Carolina sickened July 16, died on July 18, and was bacteriologically confirmed on July 18. In all, 7 infected rats were taken from Carolina out of a total of 350 examined.

The local health officer in Carolina, pursuant to orders from the director of sanitation, immediately attended to the mechanical cleaning of the town, removal of rubbish, etc. On July 4, Asst. Surg. C. L. Williams was ordered to Carolina. Dr. Pedro Malaret, of the insular department of sanitation, was in joint control with Dr. Williams until July 12, when he left for work in Rio Piedras. The work instituted at Carolina consisted in summary destruction of rat harborage, and in rat proofing, with the incidental capture of all rodents possible. Mr. Walter St. Elmo, of the insular police, ably assisted in all the work at Carolina.

One of the most marked cases of rat infestation of mamposteria walls occurred in Carolina. The house was one in which cases 2 and

3 acquired their infection. The walls were 2 or 3 feet in breadth, and rat holes were seen, not only toward the floor but at different levels up to the ceiling. When the second case occurred in this house it was so evident that rat-proofing by any expedient whatever would be of doubtful efficacy, that, in view of the place being such a focus of infection, it was decided not to stop short of thorough removal of the harborage, and consequently the walls and floors were destroyed. Nine rats were taken from the interior of the walls. At one place the rats had excavated a hollow space of at least a quart capacity. The report of Asst. Surg. Williams is appended hereto. He was detached from Carolina on August 11 and was sent to Ponce when plague preventive measures were instituted in that place.

It is highly probable that the infection was transmitted to Carolina from San Juan by means of rats in merchandise. This assumption is supported by the following: The distance of Carolina from San Juan and the appearance of human and rodent plague in Carolina so soon after the discovery of the infection in San Juan; the first patient attacked had not been out of Carolina, but worked in a warehouse handling merchandise from San Juan; no known infection had occurred at intervening points.

DORADO.

On July 13 a suspicious death was reported from the town of Dorado, distant from San Juan about 15 miles. The post-mortem examination established a diagnosis which was confirmed by animal inoculation July 17.

The town is quite small, being a mere group of houses. An insular health official was sent to Dorado to institute antiplague measures at that place. Some 10 rodents were captured and examined without discovering any infection among them. The case, a boy of 13 years, was accustomed to frequent the vicinity of the depot. He is said to have stolen a ride on a freight train from Dorado to Camuy on July 11. The probability of an extension of infection by overland migration of rats from San Juan does not seem likely, as no other case, human or rodent, occurred in Dorado or the surrounding country in so far as is known. This case seems to be of sufficient interest to merit a special case report, which is contained in Appendix II.

CAGUAS.

A force of service rat trappers was put to work in Caguas in early August.

Rodents from this place were examined in the service laboratory at the rate of about 100 per week.

On September 23 an infected *Mus norvegicus* was trapped, diagnosed on September 24, and verified by animal inoculation. On

October 14 a second *Mus norvegicus* was taken in the opposite side of the town, a third on December 9, and again on December 21 an infected *Decumanus* was trapped. No human cases so far as is known occurred in this town. Caguas is located on the highway leading south from San Juan, about 23 miles distant.

Aside from the general sanitary conditions, the town is full of houses that furnish rat harborage, both by reason of their roofs of country tiles and their lack of elevation. In September but little had been done toward rat proofing. The local health officer had realized the threatened danger, but his attempts to secure improved conditions had been more or less nullified by the apathy of the general public and the indifference of the city courts in administering the law.

When the first plague rat was caught, some 50 men were at once employed to summarily destroy all rat harborage in the block in which the plague rodent was trapped, as well as the four contiguous blocks. The tile roofing and the floors of all buildings close to the ground were removed. The earth beneath all houses was drenched with petroleum as soon as flooring was removed. Fifty rodents were captured from the plague block, including 15 from the same house that the infected rat came from. One-third of these rodents were taken from the roofs. The force of rat trappers and poisoners was doubled, and part of the office and field force was transferred from San Juan to Caguas. No other infected rat being discovered for two or three weeks, the work of rat proofing and rat poisoning assumed a more leisurely rate of progress. Upon the discovery of the third and fourth rodent case, it was decided to send Asst. Surg. Williams to Caguas, with an increased force of inspectors and employees. His report of service operations is attached herewith.

The means by which infection reached Caguas is of interest, but it can be only speculation as to whether it was due to the transfer of an infected rat from San Juan in railroad freight or a land extension along the highway.

An infected rat was taken from Rio Piedras on July 12. This village is about 3 miles from San Juan on the road to Caguas. The rodent was picked up dead in the street, and as no other rodent infection was thereafter discovered in Rio Piedras and no human cases occurred, it is not beyond reason that it might have been a solitary migratory rat. A survey of the Rio Piedras-Caguas turnpike in the latter part of September elicited statements to the effect that there had been a noticeable mortality among the rats at several intermediate points two or three weeks prior to the discovery of the first infected rat in Caguas, but nothing more tangible pointing to a rural spread of the infection was discovered.

ARECIBO.

Among the rodents examined at the laboratory on October 12 a suspicious *Mus norvegicus* was discovered and was proved to be positive for plague by animal inoculation on October 15. On October 26 another plague-infected *Mus norvegicus* was taken from Arecibo.

Arecibo is a seaboard town located in the northwestern part of the island about 80 kilometers from San Juan. It is the fourth city in population in Porto Rico, having about 15,000 people, and is a clean, well ordered town, with considerable municipal pride. In general the sanitary conditions were good, but there was one district on the water front composed chiefly of shacks, badly crowded together, without sewage or garbage disposal. Being on a slope, however, there was no rat harborage on a large scale, but the squalid habits of the people made for more or less rat infestation by furnishing an abundant food supply. In the better sections of the town there were quite a large number of rat harbors in the way of food depots and dwellings. So far as is known no human cases occurred in this town either before or after the infected rats were discovered. As soon as the focus was discovered, the rat-trapping force in Arecibo was increased and rat-proofing measures were at once initiated by the insular department of sanitation.

In January Passed Asst. Surg. Ridlon was transferred from Mayaguez to Arecibo, and with him were sent two inspectors who had had extensive experience in rat-proofing in San Juan. In addition to the other service operations, a special laboratory was started, where rodents were examined not only from Arecibo but also from Manati and Aguadilla.

On February 15, 1913, eradicated measures were turned over to the insular department of sanitation. Dr. Ridlon's report is appended hereto.

The means by which infection reached Arecibo was probably infected rodents in merchandise from San Juan. The infection of the Dorado case on July 8 bears rather strongly on this assumption. The large number of intervening points which remained free from infection precludes the possibility of an overland extension.

Extension of Service Operations to Noninfected Points.

Bearing in mind the possibility of unknown rural spread of infection among the rodents of Porto Rico, it was decided in early August to extend service operations to other points in the island. Bureau authorization for this increased function was requested and granted, the amount of service funds available for this extension of work being increased from \$5,000 per month to \$7,500 per month, exclusive of the amount spent in connection with quarantine. A rat-trapping

force was sent to Carolina, Rio Piedras, and Caguas. Later on trapping was started in Arecibo, Bayamon, Manati, and Aguadilla.

Passed Asst. Surg. Ridlon, on being relieved of the charge of the San Juan laboratory by Passed Asst. Surg. Chapin, proceeded to Mayaguez and instituted plague preventive measures in that city.

Asst. Surg. Williams was likewise relieved from duty in Carolina and proceeded to Ponce for the purpose of instituting plague suppressive measures at that point. The report of these officers is appended hereto. No plague infection was discovered in the above-named places, except in Caguas and Arecibo, mention of which has been made.

Laboratory.

As has been stated before, the laboratory building was well isolated and admirably adapted for the purpose, having been selected by the director of sanitation and Surg. S. B. Grubbs. Maj. F. F. Russel equipped the building and operated the laboratory from June 30 to July 9. Passed Asst. Surg. J. R. Ridlon was in charge from that date to August 8, when he was relieved by Passed Asst. Surg. C. W. Chapin. Dr. F. J. Hernández, who is the assistant bacteriologist in the insular laboratory, was appointed acting assistant surgeon in the service and aided the above-named officers in the laboratory work until January 1, when he resumed his position with the insular government.

The method of rodent examination in the laboratory was the same as used in the service operations in San Francisco. Laboratory attendants tacked the rodents to shingles, dissected them, and made clerical records concerning their source and any other data pertaining to the work. The appearance of the gross lesions was depended upon for diagnosis and animal inoculation was required for purpose of confirmation of the diagnosis of plague in rats.

There was a marked reduction of infected rats in August, but a reliable estimate of rodent infection from the beginning of the epidemic in San Juan is precluded for several reasons. In the first week of rat examination there was no widespread trapping. The rodents came from a comparatively small area. The town people at first turned in many rats, but later, as suppressive measures worked an inconvenience, they burned them. The difference of technique employed during the first week or two and that used during the remaining weeks of the epidemic might be another source of error. The first rats were diagnosed by smear only, a bipolar bacillus determining the diagnosis; whereas later the gross lesions were considered and confirmation by animal inoculation was required.

During July and August a considerable number of rodents were encountered presenting marked subcutaneous injection with bubo.

Smears made from the tissues would not infrequently show bipolar bacilli. Without animal inoculation these rodents might have been considered as probable plague. Rodents presenting this appearance were generally marked "suspicious" pending the result of animal inoculation. No great stress, however, was laid on the appearance of the smear from suspected rodents, as the invasion of all tissues by saprophytic organisms will not infrequently cause bipolar organisms to appear in the prepared smears, more especially if carbolthionin or Archibald's stain be used.

In addition to the examination of rats a number of mongoose which were caught in traps were sent to the laboratory for examination. None of them was found infected.

There was no evidence of chronic plague among any of the infected rats, unless the last rat from Caguas be so considered. This rodent had no bubo nor any gross lesion indicating plague. It was found dead on the premises from which "rodent case No. 3, Caguas," had been trapped, and for that reason white rats were inoculated with some of the tissues from this rat. The rat proved to be plague infected. The only lesions observed in this animal were adhesions of the pleura and of the spleen and liver. No bubo, pleural effusion, granulations in the viscera, or subcutaneous injection was noted.

Character of building from which infected rats were taken.

From dwellings.....	23
From food depots.....	8
From steamships.....	2
Turned in untaged.....	121
Found dead on streets.....	10
Taken from stables.....	2
Total.....	66

Rat Infection.

Sixty-six rats were diagnosed as infected, 34 prior to service assumption of the work and 32 subsequently. Of this total, 52 were from San Juan, 7 from Carolina, 4 from Caguas, 2 from Arecibo, and 1 from Rio Piedras. The first plague rats were diagnosed from smear only, the others by smear and gross lesions of rat, and confirmed by guinea pig inoculation.

Prior to July 1 the species was not reported.

Classification of infected rodents.

<i>Mus norvegicus</i>	37
<i>Mus rattus</i>	4
<i>Mus alexandrinus</i>	1
<i>Mus musculus</i>	2
Unclassified.....	22
Total.....	66

¹ Most of these were examined in first week of the epidemic.

² These two rodents, reported as mice, were taken from the house of a human case on June 24. On inquiry at a later date it developed that the prepared smear was examined by bacteriologist without seeing the rodents. The laboratory attendant, who prepared the smears, stated he was uncertain whether the rodents were mice or young rats—though they were reported as former species. With this exception all plague rodents examined prior to June 30 were tabulated as "rats."

Flea Survey.

The number of live rats examined during the months of July and August, for fleas, was not sufficient to estimate the percentage of infestation. The species of fleas found were: *Xenopsylla cheopis*, *ctenocephalus canis*, *echidnaphaga gallinacae*, and the *rhynchoprion penetrans* (chigoe). The latter species of flea is quite frequently found on human beings in San Juan, but was not found on rodents. Burrowing beneath the skin it ovulates, making a very painful nodule. Several plague cases were found to have these chigoe nodules. It would be of epidemiological interest to know whether the female immediately penetrates the skin of her first host and ovulates, or whether she may feed on one or more hosts prior to depositing her eggs. This was not determined.

Passed Asst. Surg. C. W. Chapin reports the following series of flea counts in San Juan:

Date.	Number of rats examined.	Number of fleas.
Sept. 14-Oct. 14.....	54 living.....	18 <i>Echidnaphaga gallinacae</i> . (All from a lot of 6 Norvegicus.)
Oct. 24-Nov. 12.....	110 living.....	None.
Oct. 24-Nov. 15.....	2,022 dead.....	¹ 24.
Nov. 16-Dec. 4.....	130 living, 751 dead.....	None.
Jan. 17-Feb. 15.....	59 living, 1,399 dead.....	² 94.

¹ Some of these 24 fleas were lost or mangled. Of the 12 identified, 2 were *Xenopsylla cheopis*; 3 *Ctenocephalus canis*; 7 *Echidnaphaga gallinacae*. Lice on rats are rare—a mite of barely microscopic size is very common. It is being studied.

² Of the 94 fleas in latter period, 85 were chicken fleas from one dead rat.

Passed Asst. Surg. J. R. Ridlon, from Mayaguez, reports the following flea count:

Date.	Rats examined.	Fleas collected.	Average number fleas.	Total monthly rain in inches.	Xenopsylla cheopis.	Ctenocephalus canis.
1912.						
September.....	627	290	0.46	8.57	277	13
October.....	620	329	.53	23.35	274	55
November.....	221	110	.49	16.69	103	7
December.....	422	429	.90	.21	425	4

There is no marked difference shown in the number of fleas for the different months, but a tendency is shown for the number to increase during the month with the least rainfall.

The relation of fleas to rats varied on different days from 54 fleas from 3 rats to no fleas from 26 rats.

All rats were brought alive in traps to the laboratory and there chloroformed together with their fleas. The traps were brought to the laboratory inclosed tightly in a canvas sack or without covering. A comparative series of counts showed that no more fleas were found

on the rats brought in the covered traps than those brought in the open traps.

The trap and all were placed in a can, the bottom of which was lined with paper. When the rats were dead they were combed and the interior of the can was searched carefully for fleas.

Asst. Surg. C. L. Williams, from Ponce, reports the following:

Date.	Number of live rats examined.	Number of fleas.
Sept. 1-Nov. 28.....	51	29 (<i>Xenopsylla</i> , 26; <i>ctenocephalus</i> , 3).
Nov. 29.....	30	9 (<i>Xenopsylla</i>).
Nov. 30.....	24	30 (<i>Xenopsylla</i> , 29; <i>ctenocephalus</i> , 1).
Dec. 1-9.....	103	45 (<i>Xenopsylla</i> , 39; <i>ctenocephalus</i> , 5; <i>pulex irritans</i> , 1).
Dec. 10-30.....	254	126 (<i>Xenopsylla</i> , 123; <i>ctenocephalus</i> , 3).

Dr. Williams reports not finding any *Rhynchoprion penetrans* or *Echidnaphaga gallinaceæ* on the rats in Ponce. The contrast between the absence of the last species in Ponce and Mayaguez (on the southern and western sides of the island) in contrast to the frequency of rat infestation by this species in San Juan is noteworthy.

Human Cases.

As mentioned above, the first known case occurred June 10, though unrecognized at the time of burial. At the time of official proclamation of infection there had occurred 12 cases. The number increased to 31 on July 7, when the service took charge of eradication measures. Thereafter occurred 24 cases, the last one on September 13. Of this series 36 died and 19 recovered. Of the total number 12 cases were diagnosed clinically, 3 cases by smears from aspirated bubo, and 40 cases by guinea-pig inoculation. Five cases were in the old city, 6 cases from La Marina, 5 cases from La Perla, 21 cases from Puerto de Tierra, 14 cases from Santurce. Outside of San Juan 3 cases were from Carolina and 1 from Dorado. One of the Carolina cases, though charged to Carolina because infection was contracted there, died some 4 miles distant from Carolina. One case charged to San Juan died on a schooner at Arroyo. He was taken ill shortly after leaving San Juan.

Infectivity of Houses.

Infectivity of houses sufficiently prolonged as to cause secondary cases was noted in four instances, three of which were in mampos-terfa buildings. These, however, were in the first days of the epidemic before sulphur fumigation or rat proofing had commenced.

Acknowledgments.

It is desired to make acknowledgment to Dr. W. F. Lippitt, director of sanitation for Porto Rico, and to his subordinates in the insular department, for the fullest cooperation throughout the campaign. To all work done by the service toward plague eradication Dr. Lippitt extended his heartiest support. Without his effective assistance the comparatively early success in plague eradication could not have been obtained. The service officers are greatly indebted not only to the director of sanitation for generous support in the epidemic work, but also to Gov. George R. Colton, Acting Gov. M. Drew Carrel, and to the different departments in the insular government.

While all the field force that were retained throughout the service operations worked faithfully, Inspectors Juan Torres and Martín Paniagua are deserving special commendation.

Pharmacist F. L. Brown and Mrs. M. D. Hernández, secretary-interpreter, were unsparing in their labors and rendered invaluable service in the transaction of office affairs.

APPENDIX.

REGULATIONS GOVERNING THE CONSTRUCTION AND MAKING RAT PROOF OF ALL BUILDINGS AND OUTHOUSES IN THE ISLAND OF PORTO RICO.

SECTION 1. From and after the approval of these regulations, no house or building, storehouse, store, warehouse, etc., can be constructed without submitting to the sanitary service a special plan providing that the floor of the lower story be made of concrete when the floor is not to be a sufficient height from the ground to permit free access; or the wooden floor may be placed immediately on top of the concrete without leaving spaces which may serve as a refuge for rats; no wood or other inferior material shall be used under the flooring. Concrete floors shall have walls of concrete or stone extending at least two feet below the surface of surrounding ground and shall also have a concrete or masonry wall extending 1 foot above the level of the floor, the walls of buildings to fit flush on top of concrete or masonry walls; and what other means are to be adopted in order that said buildings and establishments may be rat proof are to be clearly specified. The sanitary service is authorized to approve or to make in said plans the changes which the case may require, without which approval the work, which must conform in each case to the definitely approved plans, can not be commenced.

The plans must be sent directly to the health officer: *Provided*, That these regulations shall be understood as amplifying the provisions concerning plans in the regulations now in force concerning constructions.

SEC. 2. In houses and buildings a ready constructed the following rules shall be observed:

Dwelling houses which have the floor of the lower story of wood shall be made rat proof by (1) raising the floor to a height of at least 2 feet from the ground with all underpinning free, or (2) shall have all space beneath flooring made rat proof by a foundation wall of stone or concrete extending below surface of ground to depth of 2 feet and fitting flush the floor of house. All decayed wood must be replaced.

SEC. 3. In no dwelling houses or buildings shall food, remnants of food, or other matter which may be made use of by rats be kept, except when placed in pantries, storerooms, or receptacles constructed so as to be inaccessible to said rodents.

SEC. 4. Roofs, garrets, courtyards, alleys, cellars, and any other open space belonging to houses or buildings must be kept free from food, garbage, forage, and other material which may serve as food or as refuge for rats.

SEC. 5. Sinks, drains, gutters, and private sewers shall be kept strictly clean.

SEC. 6. Coconut palm trees, mango-fruit trees, which furnish food for the rats and are situated in gardens or orchards of any house or building within the city limits or within the neighborhood of any town, at the discretion of the health officer and with the approval of the director of health, shall be kept free of rats, first exterminating those already existing and protecting the trunk of the trees with a band of tin or zinc and other suitable means to render the trees inaccessible to the rodents.

SEC. 7. Every building intended for a market, warehouse, storehouse, bakery, macaroni factory, distillery, pastry shops, stores, groceries, wine cellars, piers, hotels, cafés, restaurants, eating houses, and booths shall be subjected to the rules prescribed for dwelling houses and buildings: *Provided, notwithstanding*, That markets, piers, warehouses, and any storehouse of provisions must necessarily have the floor of concrete or plaster; and, further,

(a) Provisions and other articles in storehouses or on sale at wholesale or retail shall be kept in piles placed upon platforms which shall be at least a foot above the pavement and arranged in rows, leaving free spaces between to permit of easy cleaning and for sanitary inspection. The floor shall be kept free of provisions spilled either through breakage or through handling of the receptacles which contained them.

(b) Groceries, small shops, and other establishment which sell at retail shall have all the provisions for daily consumption in lockers or cupboards placed in such a way that they shall be inaccessible to rats.

SEC. 8. Lots and ground not built upon within the city limits shall be subjected to the preceding regulations which may be applicable.

SEC. 9. Barnyard fowls shall not be kept within the city limits of any town except under the following conditions:

A rat-proof henhouse shall be constructed which must have a concrete floor, as well as walls of the same material, which shall be sunk in the ground to a depth of 2 feet and raised 1 foot above the level of the floor. This surface must be surrounded by wire netting which shall have a half-inch mesh and be 6 feet high. Food intended for the fowls must be kept within these henhouses, so that it shall not be accessible to rats, and it will not be permitted in any case to deposit it outside.

SEC. 10. Stables and stalls within the city limits must fulfill the following conditions:

1. Each horse cared for shall have a space of not less than 5 square meters.

2. The floor shall be of concrete and with an adequate slope, as of one-eighth of an inch per foot.

3. Upon this concrete floor may be placed planks for a floor for the horses; this shall be made in parts or sections so that it may be easily raised. The boards which form the floor shall be separated by at least 2 inches.

4. The sections or parts of the floor must be raised once a week in order to do the necessary cleaning.

5. Each stable shall be provided with a well, lined with cement, in which to deposit the manure; the well to have a capacity of at least one-fourth of a cubic meter for each horse. Said receptacle shall have a well-fitting cover divided into two sections.

6. The manure shall be placed in said receptacles and carefully covered. The cleaning of said wells or receptacles shall be done once a week, and the manure carried to the place which the director of health may designate.

7. The stable, stall, manger, and their surroundings must be kept strictly clean.

8. Grain to be used as food for the live stock shall be kept in a rat-proof box.

9. Each manger shall be placed at a minimum distance of 2 feet from the wall or building, and its sides shall be covered with tin or zinc; and the said manger shall be at least 18 inches deep to avoid the spilling of food.

SEC. 11. These conditions must be fulfilled within a period of time which the director of health in each case shall fix in accordance with the importance of the work and the means to be obtained in that locality.

SEC. 12. Every infraction of any of the rules set forth in these regulations shall be punished with a maximum fine of \$100, and the director of health shall have the necessary work done at the expense of the owner, in accordance with the law of sanitation in force: *Provided*, That those persons who prove that they do not possess more than one piece of property whose value does not exceed \$100, according to the official assessment, shall be exempt from payment, and the said work shall be done in this case at the expense of the Public Treasury.

AMENDMENT TO SANITARY RULES AND REGULATIONS, APPROVED JANUARY 24, 1913, GOVERNING THE CONSTRUCTION AND MAKING RAT PROOF OF ALL BUILDINGS AND OUTHouses IN THE ISLAND OF PORTO RICO, APPROVED BY THE EXECUTIVE COUNCIL ON JULY 11, 1912.

SECTION 1. Sections 2, 4, 7, and 10 of the rules and regulations entitled "Sanitary Rules and Regulations No. 3, governing the construction and making rat proof of all buildings and outhouses in the island of Porto Rico, approved July 11, 1912," are hereby amended in the following manner:

SEC. 2. In houses and buildings already constructed the following rules shall be observed:

Dwelling houses and buildings intended for dry goods stores, warehouses or factories therefor, dressmaking establishments, banks and offices which have the floor of the lower story of wood, shall be made rat proof by (1) raising the floor to a height of at least 2 feet from the ground with all underpinning free, or (2) shall have all space beneath flooring made rat proof by a foundation wall of stone or concrete extending below the surface of the ground to a depth of 2 feet and fitting flush to floor of house. All decayed wood must be replaced.

SEC. 4. Roofs, garrets, courtyards, yards, alleys, cellars and any other open space belonging to houses or buildings must be kept free from food, garbage, forage, and other material which may serve as food or as refuge for rats. All masonry walls surrounding courtyards and yards which are not in good condition shall be made rat proof by being reinforced on the inner side with concrete to a depth of 2 feet below surface and 2 feet above level of ground.

SEC. 7. Every building the lower story of which is not intended for any of the uses specified in section 2 of these rules and regulations shall have the floor of the said lower story constructed in the following manner:

(a) Those intended for markets, piers, or storehouses for provisions at wholesale must necessarily have the floor of the lower story of concrete.

(b) Buildings intended for any other use shall also have the floor of concrete or plaster, except in localities in which, due to the nature of the ground or to the natural situation, the lower story of the building is at a height greater than 2 feet above the level of the ground, in which case wooden floors may be used, provided that the distance between the ground and the said floor be maintained (at least on three of its sides) absolutely free and with all underpinning free; provided further that if it should have one or more of its sides at a height less than 2 feet the same must rest upon a wall of stone or concrete, which shall extend below the surface of the ground to a depth of 2 feet and be raised 2 feet above the level of same.

(c) Buildings the lateral and rear walls of which are below the level of the ground or street must necessarily have the floor of concrete or plaster surrounded by a concrete or masonry wall extending 2 feet above the level of the floor and 2 feet below the surface of the same.

SEC. 10. Stables and stalls within the city limits must fulfill the following conditions:

1. Each horse cared for shall have a space of not less than 5 square meters.

2. The floors shall be of concrete and with an adequate slope as of one-eighth of an inch per foot and with a wall of concrete or stone extending 2 feet below the surface of the ground.

3. Upon this concrete floor may be placed planks for the horses, this to be made in sections, so that it may be easily raised. The boards which form the floor shall be separated from each other by at least 2 inches.

4. The sections or parts of the floor must be raised once a week in order to do the necessary cleaning

5. Each stable shall be provided with a well, lined with cement, in which to deposit the manure, the well to have a capacity of at least one-fourth cubic meter for each horse. Said receptacle shall have a tight-fitting cover divided into two sections.

6. The manure shall be placed in said receptacles and carefully covered. The cleaning of said wells or receptacles shall be done once a week and the manure carried to the place which the director of sanitation may designate.

7. The stable, stall, and manger and their surroundings must be kept strictly clean.

8. Grain to be used as food for the live stock shall be kept in a rat-proof box.

9. Each manger shall be placed at a minimum distance of 2 feet from the wall of building and its sides shall have a slope of 2 inches toward the bottom and shall be covered with tin or zinc, and the said manger shall be at least 18 inches deep to avoid the spilling of food.

REPORT OF CASE OF PLAGUE OCCURRING IN DORADO.

The following case history is reported because it occurred in a small town some 31 kilometers from San Juan, where no rat infection was discovered or other human cases developed and the source of infection was not clearly determined.

The facts elicited seem to point to an infection acquired by the boy, M. M., stealing a ride in a freight car from Dorado to Camuy three or four days prior to his death. The first symptoms were noted on Thursday, July 11, at which time the boy had severe headache, nausea, prostration, and fever. No buboes were noticed by the visiting physician. The patient grew worse, dying on Saturday, July 13, at which time he had a large femoral bubo. Autopsy was performed. Bipolar bacilli were observed in smear from the bubo, and guinea-pig inoculation confirmed the diagnosis of plague. The following factors bearing on the possible source of infection were obtained:

The boy worked in a sugar mill quite near Dorado. Each night he was accustomed to go to the railroad station to carry baggage. It is said he was inclined to spend much time in the vicinity of the station. On July 3 a cousin came from San Juan bringing a package of clothing.

She visited the house of the patient, returning to San Juan July 4, and came again to Dorado on July 11, the day on which the boy developed symptoms. On July 8 the boy had left Dorado hidden in a freight car and had journeyed as far as Arecibo or Camuy, a town a few miles west of Arecibo, returning home the next day. The freight train upon which he had ridden was from San Juan, stopping at Dorado en route to Arecibo and the western end of the island.

From this it is seen that there are three ways in which the child may have acquired infection: First, from infected rat in Dorado; second, through infected fleas in the clothing brought from San Juan by the cousin; and third, while hidden in the car of merchandise from San Juan to Camuy.

The first hypothesis seems untenable on account of no other cases developing in Dorado and no rodent infection being discovered, though he may have come in contact with some source of infection near the depot, either flea or rodent, that was not transmitted further than to the one case.

The probability of the infection being acquired from infected fleas in the clothing his cousin brought from San Juan seems remote. As the boy was already ill at the time of her second trip from San Juan, any consideration of this visit can be eliminated.

If the possibility of an infection at the time of her visit on July 3 be considered, the incubation would have been eight days, an exceptionally long period of time. At the time of the first and second visits there were no plague cases, either rat or human, in the imme-

diate neighborhood of the San Juan house where the cousin lived. On July 27 there was a human case within three doors away, but this can hardly be considered as other than a coincidence.

There remains, then, the assumption that the boy contracted the infection while in the freight car. The period of time intervening between his ride and onset of symptoms coincides with the usual length of incubation—three or four days. The car was from the center of rat infection in San Juan, and his contact with any rats or fleas was quite prolonged. He possibly may have slept in the car overnight.

Another point of interest in this connection is the fact that rodent infection was later on discovered in Arecibo. This city is the destination of large quantities of freight traveling on the same branch of the railroad that the boy rode on. That infection was transported to Arecibo by means of rodents in merchandise seems the most plausible hypothesis.

TABULATION OF RODENT PLAGUE CASES.

SAN JUAN.

Rodent case serial No.	Date.	Species.	Diagnosis.	Kind of building taken from.	Treatment of premises.	Human cases.
1	June 22	Not recorded.	Smear only	Frame building, combined grocery and dwelling.	Rat proofed in July; concrete floor and walls substituted for plank.	Case 28 July 5, case 31 July 13; 50 feet distant.
2	do.	do.	do.	Unknown.	None.	None.
3	do.	do.	do.	do.	do.	do.
4	do.	do.	do.	do.	do.	do.
5	do.	do.	do.	do.	do.	do.
6	do.	do.	do.	In street.	do.	do.
7	June 23	do.	do.	Unknown.	do.	do.
8	do.	do.	do.	do.	do.	do.
9	do.	do.	do.	do.	do.	do.
10	do.	do.	do.	do.	do.	do.
11	do.	do.	do.	do.	do.	do.
12	do.	do.	do.	do.	do.	do.
13	do.	do.	do.	do.	do.	do.
14	do.	do.	do.	do.	do.	do.
15	do.	do.	do.	do.	do.	do.
16	June 24	M. musculus ¹	do.	Frame dwelling.	Destroyed.	Case June 22.
17	do.	do.	do.	do.	do.	Do.
18	do.	do.	do.	Ship in San Juan Bay.	Fumigated with sulphur.	
19	do.	do.	do.	do.	do.	
20	June 27	do.	do.	Frame dwelling.	Rat proofed by elevation in July.	
21	do.	do.	do.	do.	do.	
22	June 29	do.	do.	Unknown.	do.	
23	do.	do.	do.	do.	do.	
24	do.	do.	do.	do.	do.	
25	June 30	M. norvegicus	Smear and gross lesions.	Frame dwelling.	Formaldehyde disinfection. Rat proofed latter part of July.	Case 31 July 21.
26	July 3	M. rattus.	do.	do.	do.	Case 23 July 3, case 25 July 3; 100 feet distant.
27	July 5	M. norvegicus.	do.	do.	Rat proofed by elevation.	Case 2 June 19; across street.
28	July 7	do.	do.	Grocery (Mamposeria).	Rat proofed.	
29	do.	do.	do.	Unknown.	do.	
30	July 8	do.	do.	Frame dwelling.	Destroyed by owner in preference to rat proofing.	Case 21 June 23, case 23 July 3, case 25 July 3, case 32 July 2, case 40 July 31; all in immediate vicinity.
31	July 9	do.	do.	Street.	General rat proofing in vicinity.	
32	July 10	do.	Gross lesions and animal inoculation.	do.	do.	

33	July 12	<i>M. rattus</i>	do.	Frame dwelling.....	Rat proofed.....	Case 27 July 4, across street.
34	do.	do.	do.	do.	do.	
35	do.	<i>M. norvegicus</i> ...	do.	Frame dwelling and grocery com- bined.	do.	
36	July 13	do.	do.	do.	do.	
37	do.	do.	do.	Not known, erroneously tagged.	do.	
38	do.	do.	do.	do.	do.	
39	do.	do.	do.	Brick dwelling and grocery com- bined.	Rat proofed.	
40	do.	do.	do.	do.	do.	
41	July 14	<i>M. alexandrinus</i> ...	do.	Frame dwelling.....	do.	Case 26 July 21, 100 yards distant.
42	July 16	<i>M. norvegicus</i> ...	do.	Same as Nos. 36 and 37.	do.	See rodent case No. 30.
43	July 17	do.	do.	Street.....	Rat proofing of vicinity.	In vicinity.
44	July 18	do.	do.	Frame dwelling.....	Rat proofed.	
45	July 19	do.	do.	do.	do.	
46	do.	do.	do.	do.	do.	
47	July 23	<i>M. rattus</i>	do.	Brick dwelling.....	Rat proofed.	Case 11 June 19, case 13 June 19, case 20 June 22.
48	July 24	do.	do.	Frame dwelling.....	do.	
49	Aug. 8	<i>M. norvegicus</i> ...	do.	do.	Destroyed by owner in preference to rat proofing.	
50	Aug. 16	do.	do.	Street culvert.....	General rat proofing in vicinity.	
51	Sept. 10	do.	do.	Combined frame restaurant and dwelling.	Evacuation and rat proofing with pulicidal measures.	
52	do.	do.	do.	Stable.....	Same as No. 51.	Case 9 June 19, 25 feet distance.

RIO PIEDRAS.

1	July	<i>M. norvegicus</i> ...	Gross lesions and animal inocu- lation.	Street.....	General rat proofing.....	No human case in Rio Piedras.
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CAROLINA.

1	July	<i>M. norvegicus</i> ...	Gross lesions and animal inocu- lation.	Frame dwelling.....	General destruction of rat harbor- age and rat proofing in the vil- lage.	Case 1 June 27, case 2 June 28, case 3 July 16; all in small village.
2	do.	do.	do.	do.	do.	
3	July 4	do.	do.	do.	do.	
4	July 5	do.	do.	Bakery.....	do.	
5	do.	do.	do.	do.	do.	
6	July 6	do.	do.	Street.....	do.	
7	July 8	do.	do.	Frame dwelling.....	do.	

1 On subsequent inquiry the laboratory attendant who had dissected the rodents and had prepared smears stated he was uncertain whether the rodents were young rats or mice.

TABULATION OF RODENT PLAGUE CASES—Continued.

CAGUAS.

Rodent case serial No.	Date.	Species.	Diagnosis.	Kind of building taken from.	Treatment of premises.	Human cases.
1	Sept. 23	M. norvegicus	Gross lesions and animal inoculation.	Combined grocery and dwelling.	Evacuation, rat proofing, and pulicidal measures.	No known human cases occurred in Caguas.
2	Oct. 14	do	do	Street.	do	do
3	Dec. 9	do	do	Frame dwelling.	do	do
4	Dec. 21	do	do	do	do	do

ARECIBO.

1	Oct. 11	M. norvegicus	Gross lesions and animal inoculation.	Street.	General rat proofing.	No known human case occurred in Arecibo.
2	Oct. 26	do	do	do	do	do

TABULATION OF HUMAN PLAGUE CASES.

SAN JUAN.

Human case serial No.	Date.	Age.	Sex.	Diagnosis.	Source of infection.	Treatment of premises.	Secondary cases.
1	June 15	20	Male	Clinical	Residence	Formaldehyde disinfection; rat proofed in July.	Case 4, case 16.
2	June 19	15	do	do	do	do	do
3	June 15	35	do	do	do	do	do
4	do	20	do	do	do	do	do
5	June 17	20	do	Bacteriological	Warehouse where employed.	Rat proofed in July.	Cases 1 and 16.
6	June 18	19	do	do	do	do	Case 6.
7	do	24	do	Clinical	Residence	Formaldehyde disinfection; rat proofed in July.	Cases 8 and 10.
8	do	33	Female	do	do	do	Cases 7 and 10.
9	do	16	Male	Bacteriological	do	Destroyed.	do
10	June 19	20	Female	do	do	See cases 7 and 8.	do
11	do	21	Male	do	do	Formaldehyde disinfection; rat proofed in July.	Cases 13 and 20.

12	do.	28	do.	do.	Docks where employed.	Rat proofed in July.	Case 11.
13	June 22	22	Female	do.	Residence.	Formaldehyde disinfection; rat proofed in July.	
14	do.	38	do.	Clinical	do.	Destroyed.	
15	June 19	28	do.	do.	do.	Formaldehyde disinfection; rat proofed in July.	
16	June 20	20	Male	Bacteriological.	do.	See cases 1 and 4.	
17	June 22	38	do.	do.	Not known, locations visited in Puerta de Tierra.	A frequent visitor in Puerta de Tierra.	
18	June 20	33	do.	Clinically	Residence.	Formaldehyde disinfection; rat proofed in August.	
19	June 22	21	do.	do.	do.	Destroyed.	
20	do.	32	do.	Bacteriological.	do.	See cases 11 and 13.	
21	June 23	30	do.	do.	do.	Formaldehyde disinfection; rat proofed in July.	
22	do.	10	do.	Clinical	do.	Formaldehyde disinfection; rat proofed in August.	
23	June 27	20	do.	Bacteriological	do.	Formaldehyde disinfection; rat proofed in July.	Case 25 in proximity.
24	July 1	45	do.	do.	Unknown.	Site of infection unknown, was a vender of ice cream in Puerta de Tierra.	
25	July 3	32	do.	do.	Residence.	See case 23.	
26	do.	11	do.	do.	do.	Rat proofed.	
27	July 4	25	do.	do.	do.	do.	Case 3 in proximity.
28	July 5	36	Female	Clinical	do.	do.	
29	July 7	11	Male	Bacteriological	do.	do.	
30	July 12	38	do.	do.	do.	do.	
31	do.	9	do.	Clinical	do.	do.	
32	do.	23	do.	Bacteriological	do.	do.	
33	July 18	22	Female	do.	do.	do.	
34	July 21	18	do.	do.	do.	Sulphur fumigation; rat proofed.	
35	do.	12	Male	do.	do.	do.	
36	do.	18	Female	do.	do.	do.	
37	July 23	24	Male	do.	do.	do.	
38	July 27	20	do.	do.	do.	do.	
39	July 30	12	do.	do.	do.	do.	
40	July 31	11	do.	do.	Not known.	Street urchin in La Marina.	
41	June 23	(?)	do.	Clinical	Residence.	Sulphur fumigation; rat proofed.	
42	Aug. 3	16	do.	do.	Died at sea on schooner from San Juan. Case should follow No. 18 in chronological order.	Sulphur fumigation; rat proofed.	
43	Aug. 5	13	Female	Bacteriological	Residence.	do.	
44	Aug. 15	19	Male	do.	do.	Destroyed; small dugout.	
45	Aug. 30	247	do.	do.	do.	Rat proofed.	
46	Sept. 4	187	Female	do.	do.	Sulphur fumigation; rat proofed.	Cases 49, 50, and 51.
47	Sept. 5	6	Male	do.	do.	do.	
48	Sept. 6	60	Female	do.	do.	do.	
49	Sept. 7	6	Male	do.	do.	do.	Cases 47, 50, and 51.
50	Sept. 11	25	do.	do.	do.	do.	
51	Sept. 13	3	Female	do.	Had acquired infection at residence of case 47, which was vacated Sept. 7.	do.	
				do.	See case 50.	do.	

TABULATION OF HUMAN PLAGUE CASES—Continued.

CAROLINA.

Hum case serial No.	Date.	Age.	Sex.	Diagnosis.	Source of infection.	Treatment of premises.	Secondary cases.
1	June 26	38	Male	Bacteriological.	Warehouse where employed.	Rat proofed in July	
2	June 28	20	do	do	See case 3. Case 2 died in Lola, but acquired infection in Carolina.	Destroyed	
3	July 16	18	do	Bacteriological.	Residence.		

DORADO.

1	July 13	13	Male	Bacteriological.	(1)	General rat proofing	

¹ Boy was a stowaway in freight car filled with San Juan merchandise from Dorado to Camuy (24 hours) 3 days prior to onset of symptoms.

Plague-Eradicative Measures in Arecibo.

By J. R. RIDLON, Assistant Surgeon, United States Public Health Service.

Work was carried on from January 3 to February 15, 1913, and consisted of measures for rat-proofing buildings and the extermination and laboratory examination of rodents.

Previous to this time two plague infected rats had been found in Arecibo, and it seemed imperative that a vigorous campaign of rat extermination and rat proofing should be carried out.

Arecibo is a seaport town on the northern coast of Porto Rico, with about 15,000 inhabitants. The most common type of buildings was a wooden structure, and many had little if any elevation from the ground. Many of these buildings had a roof of Spanish tile, which afforded rat harborage. Here also roofs of thatch or similar construction were quite prevalent. These were found to harbor rats and had to be replaced by roofs of zinc or sheet iron.

All houses, except in the outlying barrios were inspected, and notices sent to the owners ordering changes making them rat proof.

It was necessary to discontinue service operations before all owners had had time to make the required changes, only about one-half having had time to comply.

When the work in Arecibo was taken over by the Public Health Service, records of inspections already made by the insular sanitary service were kindly turned over for our use, and at the termination of our work we turned over our records of inspections to facilitate the continuation of the work by the insular department of sanitation.

Summary of rat-proofing operations.

Dwellings inspected.....	1,342
Food depots.....	105
Stables.....	5
Notices served.....	728

LABORATORY OPERATIONS.

From January 21 to February 15 a laboratory was maintained at Arecibo for the examination of rats from the three towns of Arecibo, Manati, and Aguadilla.

A force of 10 rat catchers, with 2 foremen, was employed in Arecibo and the number of rats in the town reduced to a minimum.

During this time no plague-infected rat was found in Arecibo. A classification of rats examined follows:

Rat examination from Jan. 21 to Feb. 14, 1913.

Species:	
Mus norvegicus.....	544
Mus rattus.....	92
Mus alexandrinus.....	286
	<hr/>
	922
Place where collected:	
Arecibo.....	449
Manati.....	191
Aguadilla.....	282
	<hr/>
	922

Plague-Eradicative Measures in Caguas.

By C. L. WILLIAMS, Assistant Surgeon, United States Public Health Service.

Previous to my arrival the work had been progressing under the insular service of sanitation except for a short period in September, subsequent to the discovery of infection among the rats, when the Public Health Service had control. I found that a great deal of work had been done by the service of sanitation; nearly the entire town had been inspected, and several hundred notices to rat-proof buildings served with 111 compliances on record.

Unfortunately in the process of transferring plague eradivative functions from the insular service of sanitation to the United States Public Health Service, the records became mixed and a great many were lost. This retarded the work somewhat and has rendered it impossible to make a precise report of the work done, the sudden discontinuance of work coming at a time when a resurvey of the city was in progress to complete the records. There are on file records of 1,063 buildings. It is estimated that records of 400 houses are missing.

The methods of rat proofing followed the same lines as in San Juan and Ponce, with a few modifications due to local conditions. The town consisted largely of small frame houses flat on the ground and mostly in poor condition. These were all ordered to be raised 2 feet with underpinning free, without option of placing a concrete wall around perimeter unless an entirely new floor was laid in the building. In addition a great many of the houses were found with country tile roofs, most of them ideal rat harbors. These were all ordered changed for other material that would be rat proof, sheet iron being the most common substitutes used. A few owners were allowed to rat proof the tiles by having them laid on narrow strips, leaving the tiles accessible from below and filling up all openings and cracks with cement. Food depots were ordered to have concrete floors with side walls 2 feet in the ground and 1 foot above level of floor; double floors and walls were ordered rat proofed with 2-inch boards; bad latrines were ordered rebuilt of concrete, and garbage cans required supplied where lacking. Many other minor matters were ordered repaired, by notice or verbally.

As stated above, the condition of the records renders precise statements impossible. A compilation of those on hand which represent 1,063 houses of a total of not over 1,500, shows the following:

Tabulation of buildings in Caguas.

Total number of buildings, estimated.....	1,463
Number of buildings inspected.....	1,063
Number of buildings passed as satisfactory.....	46
Number of buildings notified to be rat proofed.....	1,017
Buildings in which rat proofing was enforced by insular service of sanitation.....	111
Buildings in which rat proofing was enforced by Public Health Service.....	360
Buildings in which work was progressing at time of discontinuance of service operations, Feb. 15....	161
Buildings that have not been repaired according to orders.....	385
Total.....	1,017

Buildings rat proofed.

Food depots.....	54
Stables.....	1
Dwellings.....	308
Total.....	360

NOTE.—Does not include the 111 enforced by insular service of sanitation.

Methods of rat proofing.

FOOD DEPOTS.	
Concrete floors.....	54
Tile roofs changed or made rat proof.....	17
DWELLINGS.	
Elevated with underpinning free.....	228
Concrete wall around perimeter, fittings flush with floor.....	57
Tile roofs changed or made rat proof.....	85
Latrines rebuilt of concrete.....	26
Houses destroyed.....	10

NOTE.—Many minor repairs are not listed in this table.

Plague-Eradicative Measures in Carolina.

By C. L. WILLIAMS, Assistant Surgeon, United States Public Health Service.

Before my arrival in Carolina the department of sanitation had started to work, having torn down several rat-infested houses.

Under the direction of Dr. Malaret, of the service of sanitation, and myself, the work has consisted chiefly in tearing up the floors of stores and warehouses and killing the rats and in thoroughly cleaning up all rubbish. All houses were first surrounded by a $\frac{1}{2}$ -inch mesh wire fence to prevent escape of rats.

While stores and warehouses, being considered the principal rat centers, received most attention, the floors of dwelling houses that appeared rat infested or likely to harbor rats driven out elsewhere were torn up as well. In three instances frame houses were torn down, being so infirm as to render tearing up of floors unsafe for workmen. One large store and storehouse of mampostería construction was almost entirely destroyed, it having been shown to be a center of infection and its walls being riddled with rat holes. The flooring of a bakery, just outside of the town, was torn up on account of an infected rat being reported from there. One hundred and ten rats were killed; none of them infected.

In many instances where stores had concrete floors unprotected by side walls going 2 feet into the ground the rats were found in burrows under the concrete floor, often as far as 6 feet from the edge of the floor. In three cases rats were caught in burrows ending beneath brick walls sunk a foot and a half, and in one instance over 2 feet into the ground.

The favorite location for the rats was, in the great majority of cases, in and around latrines. Most of the latrines are constructed of soft brick and except in those cases when they were entirely free on all sides were found to be rat harbors. Many of them were destroyed in order to catch and kill the rats.

In conjunction with the more active measures, I made a house-to-house inspection of the entire town and directed the tenants regarding the measures to be taken to rat proof each house. Much work has been done by them.

Tabulation of work performed.

Number of houses.....	418								
Number of food depots.....	26								
Number of stables.....	3								
Houses destroyed.....	<table border="0"> <tr> <td>{Mamposteria..</td><td>1</td></tr> <tr> <td>{Frame.....</td><td>3</td></tr> <tr> <td>{Cement....</td><td>4</td></tr> <tr> <td>{Wooden....</td><td>35</td></tr> </table>	{Mamposteria..	1	{Frame.....	3	{Cement....	4	{Wooden....	35
{Mamposteria..	1								
{Frame.....	3								
{Cement....	4								
{Wooden....	35								
Floors torn up.....	22								
Latrines destroyed.....	17								
Yards cleaned out.....	350								
Rats caught, approximately.....									

Improvements ordered.

Houses ordered raised to height of 2 feet.....	73
Houses to be raised by excavation beneath.....	60
Concrete floors ordered in stores or warehouses.....	19
Latrines ordered rebuilt of concrete.....	58
Latrines to be rat proofed with facing of concrete on outside and concrete top.....	137

Houses already rat proof.

Raised 2 feet or more.....	152
Houses in Cabro Sucio raised 2 feet or more, estimated.....	100
Houses with rat-proof concrete floors.....	10

As a model to be followed in reconstruction of latrines, a latrine of concrete was built by the service of sanitation under my direction.

Plague-Preventive Measures at Mayaguez.

By J. R. RIDLON, Assistant Surgeon, United States Public Health Service.

Plague eradication measures were commenced on September 1, 1912, and continued to February 15, 1913. The work may be divided into two parts: Measures taken in regard to rat proofing of buildings and measures taken in regard to rat extermination.

Mayaguez has a population of about 20,000. Most of the buildings on the main streets are of mamposteria construction, while those in the outlying districts are mostly of frame construction.

The requirements for rat proofing were enforced. The essential requirements for dwellings are an elevation of 2 feet with clear underpinning or surrounding the lower story with a concrete wall extending 2 feet below the surface of the ground and perfectly adjusted to the floor, and for food depots a concrete floor with walls extending 2 feet below the surface of the ground and 1 foot above the floor level.

Buildings were inspected and notices containing specifications of the necessary changes sent to the owners.

A summary of the inspections and compliances from September 1, 1912, to February 15, 1913, follows:

Dwellings inspected.....	1,717
Food depots.....	209
Notices served.....	1,141
Corrections made.....	904
Groceries out of business.....	14

Rat proofing in Mayaguez from Sept. 1, 1912, to Feb. 15, 1913.

Nature of corrections.	Number of corrections.	Cost of corrections.
Dwellings surrounded by concrete wall extending 2 feet below the surface of the ground and perfectly adjusted to the floor.....	353	\$5,331
Food depots, concrete floors, with concrete walls 2 feet below the surface of the ground and 1 foot above the floor level.....	174	19,475
Dwellings, elevation of 2 feet, secured by raising the building or excavation beneath.	88	663
Miscellaneous, including renovation of wooden floors and rat proofing double walls..	275	706
Food depots out of business.....	14	.....
Total.....	904	26,175

EXTERMINATION OF RODENTS.

A force of 10 to 12 men was employed from August 29 to December 30 in rat catching and a laboratory maintained for the examination of rodents from August 29 to October 31, inclusive, and from November 16 to December 30, inclusive.

Both wire-cage traps and snap traps were used. All rats were dissected and carefully examined after their fleas were killed by immersion in petroleum solution or by chloroform. During this time no plague-infected rat was found.

A summary of rat examinations from August 29 to October 31, inclusive, and from November 16 to December 30, 1912, follows, all rats examined being caught in Mayaguez:

	Negative.
Mus norvegicus.....	4,432
Mus rattus.....	303
Mus alexandrinus.....	813
Mus musculus.....	152
Mongoose.....	20
Total.....	5,720
No plague-infected rodent was found.	

FLEA INFESTATION OF RATS IN MAYAGUEZ.

A flea survey was carried on in connection with the examination of rats for plague infection in Mayaguez during the last months of 1912. All rats were brought alive in traps to the laboratory and there chloroformed, together with their fleas. The traps were brought to the laboratory inclosed tightly in a canvas sack or without covering. A comparative series of counts showed that no more fleas were

found on the rats brought in the covered traps than those brought in the open traps.

The trap and contents were placed in a can, the bottom of which was lined with paper. When the rats were dead, they were combed and the interior of the can was searched carefully for fleas.

The following table shows the result obtained:

Flea infestation of rats.

Months.	Number of rats examined.	Number of fleas collected.	Average number fleas per rat.	Mean monthly temperature.	Total monthly rain.
1912.					Inches.
September.....	627	290	0.46	78.4	8.57
October.....	620	329	.53	78.1	23.35
November.....	221	110	.49	77.3	16.69
December.....	472	429	.90	76.9	.21
Total.....	1,940	1,158	.64		

There is no marked difference shown in the number of fleas for the different months, but a tendency is shown for the number of fleas to increase during the month with least rainfall.

The relation of fleas to rats varied on different days from 54 fleas from 3 rats to no fleas from 26 rats.

A classification of fleas follows:

Classification of fleas.

Month.	Number of fleas collected.	Xenopsylla cheopis.	Ctenocephalus canis.	Percentage of Xenopsylla cheopis.
1912.				
September.....	290	277	13	95
October.....	329	274	55	83
November.....	110	103	7	93
December.....	429	425	4	99
Total.....	1,158	1,079	79	

It is here seen that the *Xenopsylla cheopis* (Rothschild) is the prevalent rat flea in this section and is the same flea that has been proven by workers in India as being most concerned in the transmission of plague.

Identification of fleas was confirmed by the Bureau of Entomology, Department of Agriculture.

Plague-Preventive Measures in Ponce. .

By C. L. WILLIAMS, Assistant Surgeon, United States Public Health Service.

On my arrival in Ponce inspectors and a rat-catching force consisting of 12 laborers, 3 foremen, and 2 laboratory assistants were employed. Wire traps to the number of 240 were already in use in the city. These were turned over by the service of sanitation and 724 snap traps were sent from San Juan. They were all distributed to the rat catchers, and the catching and examining of rats was begun at once. A suitable laboratory was furnished and equipped by the service of sanitation.

The city was divided into 12 districts, 10 in the city proper and 2 in the playa, or water front, which is about 2 miles from the rest of the city and contains most of the large warehouses. There are no docks with the exception of one under construction which will be, I believe, when completed as near rat proof as it is practicable to make a dock, concrete and metal only being used in construction. Each inspector was given 6 districts.

As food depots and stables were considered the most important they were inspected, notified, and the notices enforced before dwellings were taken up. On account of the unsatisfactory system of numbering in Ponce, each house was numbered as inspected, a card with district and house number being used.

The records of inspection were made on special blanks and brought to the office. Notices were then issued to the owners of houses not rat proof, allowing usually 15 days for compliance. If not complied with the case was taken to court or the building closed, the latter method being much more efficacious for stores and warehouses.

The methods of rat proofing followed the same lines as in San Juan, with the exception that none of the mamposteria construction of the same nature as that found in San Juan exists in Ponce. The old masonry here consists of stone or brick with a mortar made of sand and lime instead of sand, mud, and lime, and is much firmer and more lasting than that in San Juan. A 1-inch facing of cement on these walls made them amply rat proof.

Dwellings of frame were required to be raised 2 feet with underpinning free or surrounded with concrete wall 2 feet deep and fitting flush with floor, replacing all rotten wood. Practically all masonry buildings have foundations 3 feet deep, so that dwellings of this type, as well as dry goods stores and hardware shops of similar construction, were required only to thoroughly repair floors. Food storehouses were required to have cement floors with concrete walls at edge extending 2 feet into the ground and 1 foot above floor level. Latrines in poor condition were ordered rebuilt of concrete. Trees were surrounded with a band of tin, and feeding pens were required for

chickens, with the result that they almost disappeared from the city. Stables were required to comply with the regulations promulgated for such buildings in the rat-proofing law.

Some buildings in too bad condition to repair were ordered destroyed. Nearly all stores and stables have been rat proofed. In the playa there remain very few buildings of any description that may harbor rats. The houses along the road between the playa and city proper, on account of frequent floods, are mostly raised. Of the dwellings in the city that were ordered repaired, the work on over 50 per cent has been completed.

A remarkable tendency to construct raised houses is seen in Ponce as shown by the appended tables in which it is seen that 85 per cent of the dwellings were found rat proof. Masonry houses were for the most part found in good condition and only a few needed extensive floor repairs. The reason for this tendency to build raised houses is probably the frequent floods that inundate the city in the wet season.

Tabulation of work accomplished in Ponce.

Population.....	46,000
Total number of buildings.....	8,321
Number of buildings passed as satisfactory.....	6,835
Number of buildings ordered to be repaired.....	1,477
Number of buildings in which orders were complied with.....	958
Number of buildings in which orders were not complied with.....	1,528

Methods of rat proofing—Food depots.

Concrete floors.....	301
Elevated 2 feet with underpinning free.....	9
Destroyed.....	4
Latrines rebuilt.....	15
Minor repairs.....	61

Methods of rat proofing—Dwellings.

Elevated 2 feet with underpinning free.....	492
Surrounded with concrete wall 2 feet deep fitting flush with floor.....	16
Repaired floor.....	39
Latrines rebuilt.....	126
Minor repairs.....	38
Destroyed.....	15

Methods of rat proofing—Stables.

Number made to conform to regulations of service of sanitation.....	43
---	----

LABORATORY REPORT.

Rats.—The laboratory report only covers the work from August 26, 1912, to January 1, 1913, when the laboratory was discontinued. In that time 2,654 rats were killed and examined. None of these was found infected with plague. The weekly reports of rats caught show an increase in the first few weeks, after which the numbers remain fairly constant until the last month, when there is a slight decline. During December there was a greater number of *Mus alexandrinus* and *Mus rattus* caught.

¹ Of these 519 were dwellings.

Fleas.—A limited flea survey was made between the dates of November 29 and December 30. Rats were examined for fleas, 237 being taken from them. The flea count varied considerably with different lots of rats. The greatest number of fleas on any one rat was 10, found on each of two specimens, one a *Norvegicus* the other an *Alexandrinus*. All these rats were brought to the laboratory alive and chloroformed in a closed bucket, the bottom being covered with white paper. Two species of mites, two species of anopleura, were also found on the rats, as well as an unidentified insect of the class rhynchota. No chigoes were found.

NOTES OF AN INFECTIOUS DISEASE RESEMBLING PLAGUE.

During the first month or two of the laboratory a considerable number of rats from the playa showed skin injection, markedly enlarged inguinal glands and enlarged but not particularly dark spleen. I had seen several plague-infected rats in San Juan with almost identical lesions. All of these, however, proved negative to guinea pigs. After the second month more cases were found. In smears from the glands and spleen no constant organism could be discovered.

Rats examined.

Week ending—	<i>Mus norvegicus.</i>	<i>Mus alexandrinus.</i>	<i>Mus rattus.</i>	Total.
Aug. 31.....				9
Sept. 7.....				65
Sept. 14.....				74
Sept. 21.....	88	42	8	138
Sept. 28.....	152	24	7	183
Oct. 5.....	135	72	8	235
Oct. 12.....	118	34	8	160
Oct. 19.....	149	57	4	210
Oct. 26.....	99	62	13	174
Nov. 2.....	104	50	12	166
Nov. 9.....	97	41	5	143
Nov. 16.....	115	40	6	161
Nov. 23.....	80	32	8	140
Nov. 30.....	77	58	14	149
Dec. 7.....	73	67	24	164
Dec. 14.....	87	64	20	171
Dec. 21.....	81	82	27	190
Dec. 28.....	62	47	13	122
Total.....	1,537	792	177	2,656

Rats examined for fleas.

Number of rats examined.....	462
Fleas found.....	237
Percentage of infestation, 0.51 flea per rat.	

Classification of fleas.

<i>Xenopsylla cheopis</i>	226
<i>Ctenocephalus canis</i>	10
<i>Pulex irritans</i>	1

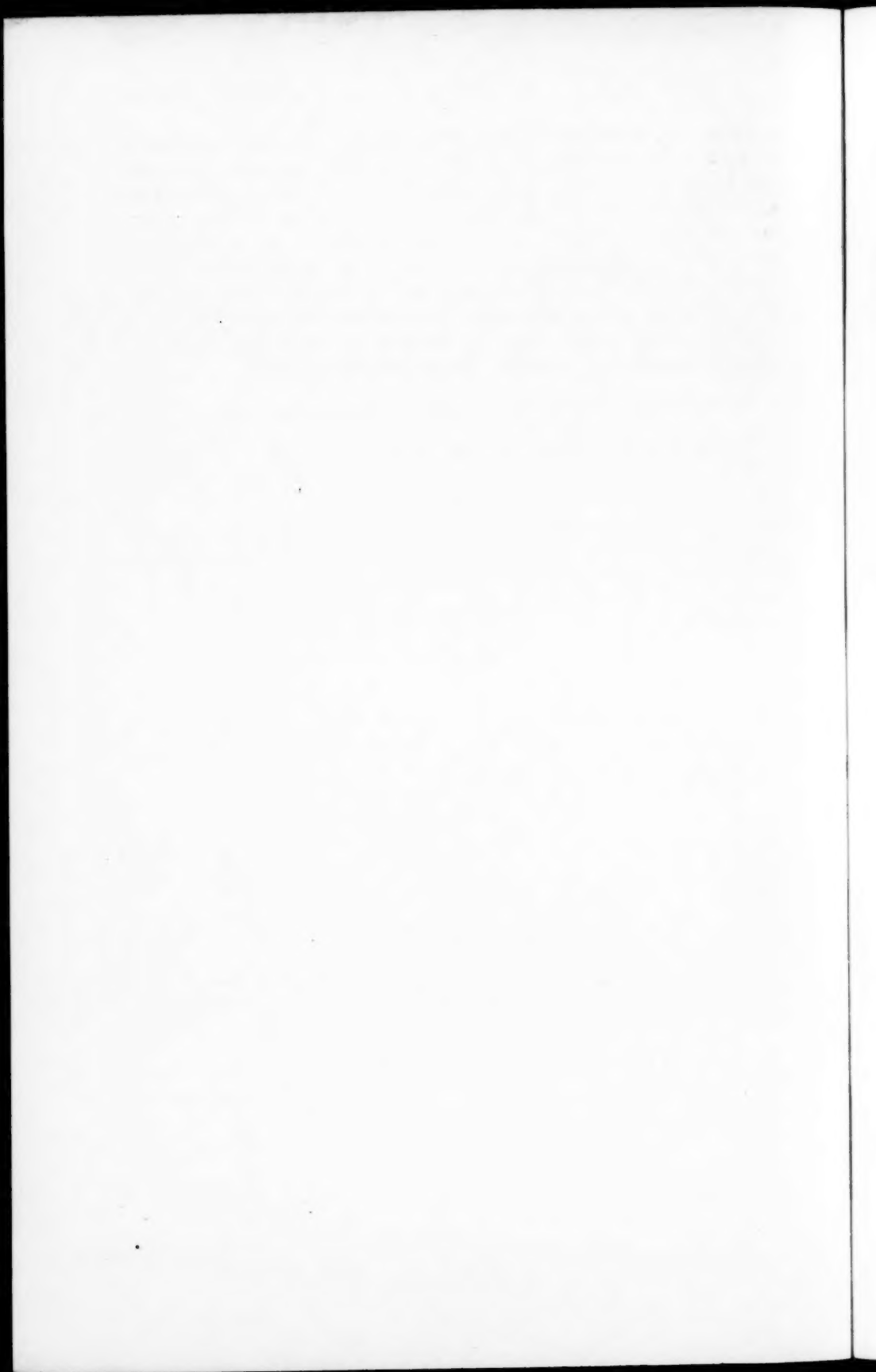




Fig. 6.—SITE OF RODENT PLAGUE IN PUERTA DE TIERRA. DESTROYED BY OWNER IN PREFERENCE TO RAT PROOFING.



Fig. 7.—SITE OF HUMAN PLAGUE IN PUERTA DE TIERRA. RAT PROOFED BY CON-
CRETE WALLS AND FLOOR.



Fig. 8.—STREET SCENE IN PUERTA DE TIERRA PRELIMINARY TO RAT PROOFING.



Fig. 9.—SCENE IN SOUTH PUERTA DE TIERRA SUBSEQUENT TO RAT PROOFING BY ELEVATION.

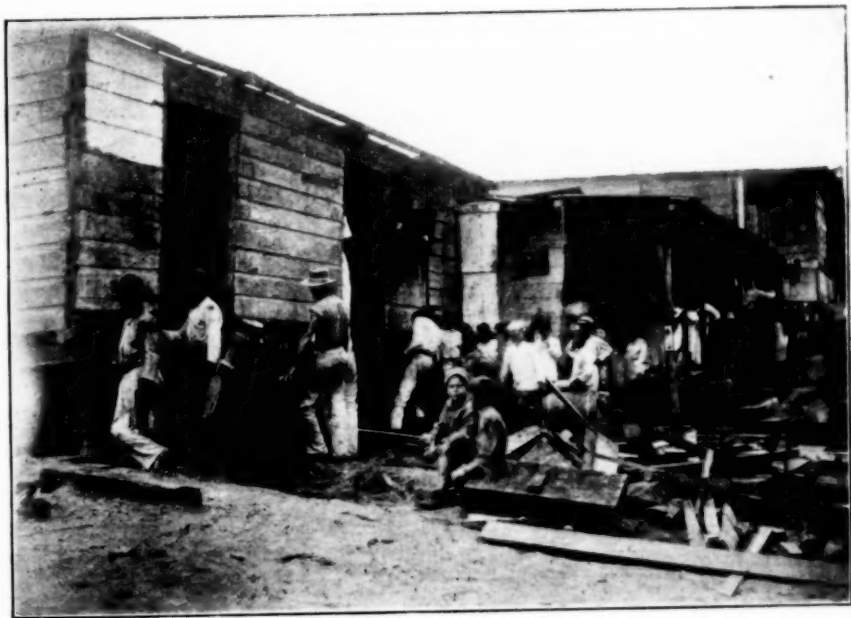
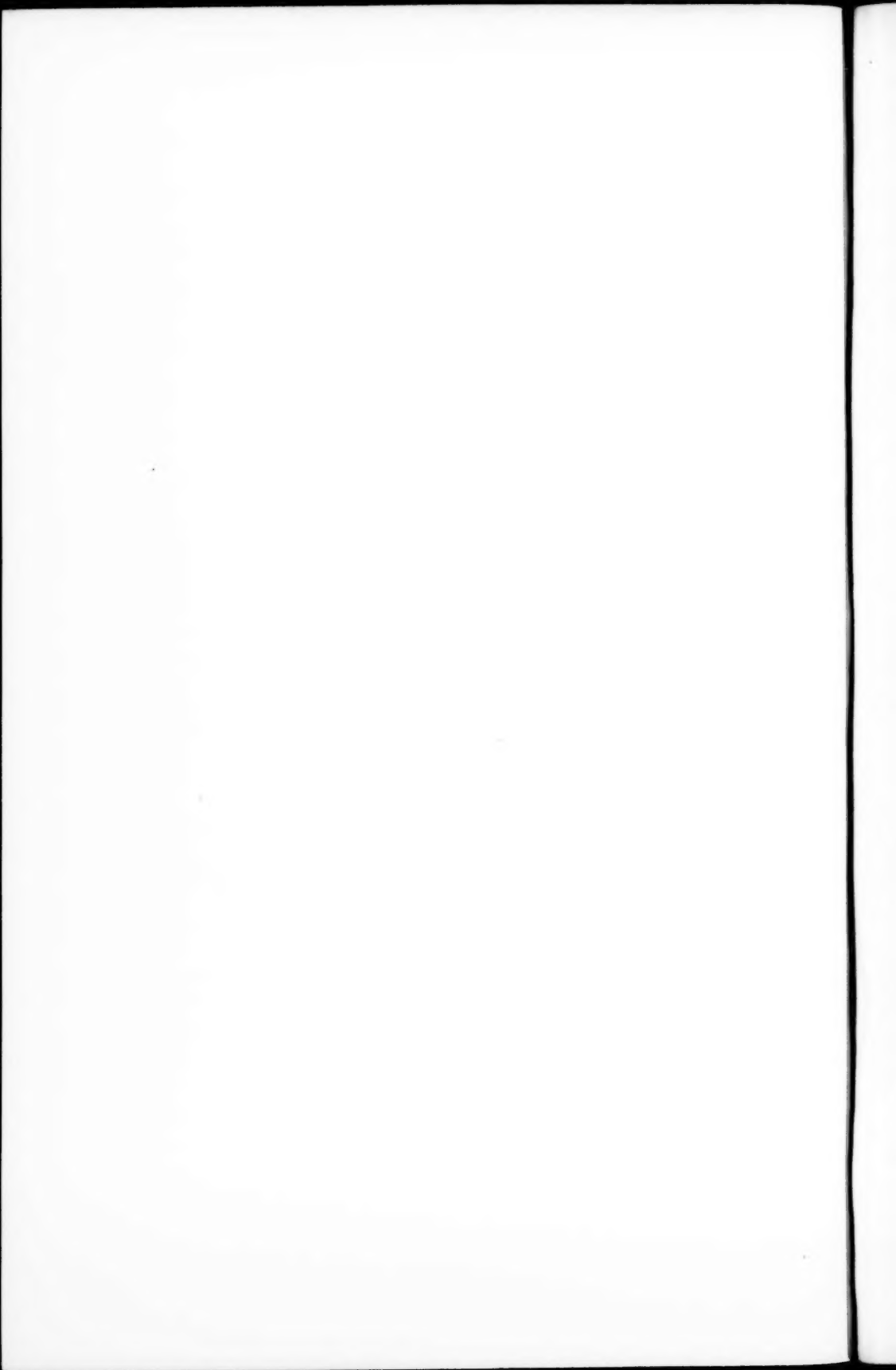


Fig. 10.—RAT-PROOFING SCENE IN PUERTA DE TIERRA.



PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

IN CERTAIN STATES AND CITIES.

SMALLPOX.

California—Berkeley and San Francisco.

Surg. Long, of the Public Health Service, reported by telegraph that during the week ended May 31, 1913, 1 case of smallpox had been notified in Berkeley and 3 cases in San Francisco, Cal.

California—Imperial County.

Acting Asst. Surg. Richter, of the Public Health Service, reported by telegraph that during the week ended May 31, 1913, 5 cases of smallpox had been notified in Imperial County, Cal.

California—Los Angeles.

Senior Surg. Brooks, of the Public Health Service, reported by telegraph that during the week ended May 31, 1913, 2 cases of smallpox had been notified in Los Angeles, Cal., making a total of 43 cases reported since January 1, 1913.

Indiana—Evansville.

Surg. Clark, of the Public Health Service, reported by telegraph that during the two weeks ended May 31, 1913, 31 cases of smallpox had been notified in Evansville, Ind., making a total of 800 cases reported since October 1, 1912.

Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Illinois (Apr. 1-30):			Virginia (Apr. 1-30):		
Counties—			Counties—		
Adams.....	1		Bedford.....	1	
Alexander.....	7		Brunswick.....	1	
Bureau.....	6		Carroll.....	41	
Cass.....	1		Charles City.....	2	
Clark.....	1		Floyd.....	4	
Cook.....	17		Grayson.....	22	
Clay.....	1		Greensville.....	4	
Dewitt.....	2		Henrico.....	3	
Edgar.....	2		Henry.....	1	
Fayette.....	1		Isle of Wight.....	3	
Fulton.....	3		Loudoun.....	2	
Gallatin.....	1		Nottoway.....	5	
Greene.....	1		Pulaski.....	6	
Ham.....	6		Roanoke.....	10	
Hardin.....	18		Warren.....	1	
Henry.....	16		Warwick.....	3	1
Iroquois.....	46		Wise.....	2	
Kane.....	12		York.....	16	
Kankakee.....	6				
La Salle.....	25		Total.....	127	1
Lee.....	9				
McDonough.....	2		Washington (Apr. 1-30):		
Madison.....	1		Counties—		
Massac.....	20		Asotin.....	14	
Montgomery.....	1		Chehalis.....	3	
Ogle.....	1		Chelan.....	4	
Peoria.....	16		Garfield.....	5	
Platt.....	1		Jefferson.....	2	
Pope.....	2		King.....	21	
Pulaski.....	7		Kitsap.....	1	
Rock Island.....	3		Kittitas.....	2	
St. Clair.....	5		Pierce.....	8	
Sangamon.....	2		Skamania.....	3	
Stephenson.....	1		Snohomish.....	9	
Vermilion.....	7		Spokane.....	61	
Tilton.....	3		Walla Walla.....	2	
Whiteside.....	22		Yakima.....	50	
Will.....	4				
Woodford.....	3		Total.....	185	
Total.....	283				
Vermont (Apr. 1-30):					
Counties—					
Caledonia.....	1				
Chittenden.....	22				
Washington.....	3				
Total.....	26				

City Reports for Week Ended May 17, 1913.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Ann Arbor, Mich.....	1		Niagara Falls, N. Y.....	1	
Chattanooga, Tenn.....	3		Peoria, Ill.....	2	
Cincinnati, Ohio.....	1		Philadelphia, Pa.....	6	
Columbus, Ohio.....	4		Portsmouth, Va.....	6	
Duluth, Minn.....	2		Providence, R. I.....	1	
Evansville, Ind.....	25		St. Louis, Mo.....	1	
Knoxville, Tenn.....	11		Seattle, Wash.....	5	
Los Angeles, Cal.....	4		Spokane, Wash.....	13	
Milwaukee, Wis.....	3		Springfield, Ohio.....	2	
Moline, Ill.....	1		Toledo, Ohio.....	8	
Nashville, Tenn.....	1		Wheeling, W. Va.....	1	

CEREBROSPINAL MENINGITIS.**Cases and Deaths Reported by Cities for Week Ended May 17, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Boston, Mass.....	1	1	Manchester, N. H.....	1	1
Bridgeport, Conn.....	2	2	Milwaukee, Wis.....	1	1
Camden, N. J.....	1	1	Muscatine, Iowa.....	1	1
Chicago, Ill.....	1	4	Nashville, Tenn.....	1	1
Cincinnati, Ohio.....	8	2	Newark, N. J.....	1	1
Cleveland, Ohio.....	1	1	New York, N. Y.....	5	4
Columbus, Ohio.....	1	1	Oakland, Cal.....	1	1
Fall River, Mass.....	1	1	Pittsburgh, Pa.....	1	1
Galesburg, Ill.....	1	1	St. Louis, Mo.....	4	1
La Crosse, Wis.....	1	1	Springfield, Mass.....	1	1
Lexington, Ky.....	2	2	Toledo, Ohio.....	1	1
Los Angeles, Cal.....	5	1	Wheeling, W. Va.....	1	1
Lowell, Mass.....	2	1			

POLIOMYELITIS (INFANTILE PARALYSIS).**Texas—Texarkana.**

The Texas State Board of Health reported by telegraph June 2, 1913, that 30 cases of poliomyelitis had been notified in Texarkana, Tex.

ERYSIPELAS.**Cases and Deaths Reported by Cities for Week Ended May 17, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Boston, Mass.....		2	Muscatine, Iowa.....	2	1
Binghamton, N. Y.....	3	1	Newark, N. J.....		2
Buffalo, N. Y.....	8	2	New York, N. Y.....		3
Chicago, Ill.....	17	1	Passaic, N. J.....	1	1
Cincinnati, Ohio.....	5	1	Pawtucket, R. I.....		1
Cleveland, Ohio.....	11	1	Pittsburgh, Pa.....	8	1
Concord, N. H.....		1	St. Louis, Mo.....	15	1
Johnstown, Pa.....	1		Taunton, Mass.....		1
Kalamazoo, Mich.....	3		Trenton, N. J.....	2	
Los Angeles, Cal.....	3		Wilkesburg, Pa.....	1	
Milwaukee, Wis.....	3				

PLAGUE.**Rats Collected and Examined.**

Places.	Week ended.	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley.....	May 17, 1913	2	225	173	
Oakland.....	do.....	11	605	460	
San Francisco.....	do.....	26	1,802	1,233	
Washington:					
City—					
Seattle.....	do.....		878	832	

¹ Rats taken from steamer *Persia*, *Mus alexandrinus*, 3; *Mus rattus*, 6.

California—Plague-Infected Squirrels Found.

Three plague-infected ground squirrels were found at two localities in Contra Costa County May 7, 1913.

PNEUMONIA.

Cases and Deaths Reported by Cities for Week Ended May 17, 1913.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Alameda, Cal.	1	2	Manchester, N. H.	2	2
Binghamton, N. Y.	9	2	Mount Vernon, N. Y.	1	1
Braddock, Pa.	3	1	Muscatine, Iowa	1	1
Chicago, Ill.	14	100	New Castle, Pa.	1	122
Cleveland, Ohio.	43	21	New York, N. Y.	34	44
Duluth, Minn.	1	1	Pittsburgh, Pa.	1	2
Elmira, N. Y.	1	1	Reading, Pa.	1	2
Grand Rapids, Mich.	1	1	Saratoga Springs, N. Y.	2	2
Harrisburg, Pa.	1	1	Schenectady, N. Y.	3	2
Lancaster, Pa.	2	1	South Bethlehem, Pa.	5	1
Los Angeles, Cal.	1	15	Trenton, N. J.	5	1

RABIES.

California—San Francisco.

Surg. Long, of the Public Health Service, reported, by telegraph, that during the week ended May 31, 1913, 3 cases of rabies in animals and 2 cases in man had been notified in San Francisco, Cal.

TETANUS.

Cases and Deaths Reported by Cities for Week Ended May 17, 1913.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Chicago, Ill.	1	1	Taunton, Mass.	1	1
Dayton, Ohio.	1	1	Trenton, N. J.	1	1
St. Louis, Mo.	1	1	Wilkesburg, Pa.	1	1

SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS.

Evansville, Ind.—Scarlet Fever, Measles, and Diphtheria.

Surg. Clark of the Public Health Service reported by telegraph that during the 2 weeks ended May 31, 1913, 31 cases of scarlet fever, 29 cases of measles, and 2 cases of diphtheria had been notified in Evansville, Ind., making totals of 430 cases of scarlet fever reported since October 1, 1912, 98 cases of measles reported since January 1, 1913, and 314 cases of diphtheria reported since August 1, 1912.

Los Angeles, Cal.—Measles.

Senior Surg. Brooks of the Public Health Service reported by telegraph that during the week ended May 31, 1913, 345 cases of measles had been notified in Los Angeles, Cal., making a total of 5,407 cases reported since January 1, 1913.

Pittsburgh, Pa.—Measles.

Surg. Stoner of the Public Health Service reported by telegraph that during the week ended May 31, 1913, 141 cases of measles, with 3 deaths, had been notified in Evansville, Ind., making a total of 9,273 cases, with 156 deaths, since the beginning of the outbreak November 1, 1912. During the week ended May 24, 129 cases were notified instead of 130 cases previously reported.

Cases and Deaths Reported by Cities for Week Ended May 17, 1913.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.	558,485	222	7	1	194	10	32	2	42	15
Boston, Mass.	670,585	224	54	1	161	4	37	3	84	26
Chicago, Ill.	2,185,283	689	173	29	447	7	273	17	145	74
Cleveland, Ohio.	560,663	184	38	—	214	3	33	3	34	18
New York, N. Y.	4,766,883	1,531	366	45	1,283	31	294	16	511	200
Philadelphia, Pa.	1,549,008	474	72	8	330	6	72	3	109	63
Pittsburgh, Pa.	533,905	207	10	—	116	6	58	4	20	14
St. Louis, Mo.	687,029	216	49	4	139	—	32	1	38	21
From 300,000 to 500,000 inhabitants:										
Buffalo, N. Y.	423,715	124	5	—	114	6	5	—	39	5
Cincinnati, Ohio.	364,463	133	16	—	5	—	9	—	26	25
Los Angeles, Cal.	319,198	117	9	1	469	1	6	1	20	13
Milwaukee, Wis.	373,857	102	27	1	42	3	20	—	27	20
Newark, N. J.	347,469	110	24	2	77	1	26	2	42	13
New Orleans, La.	339,075	134	18	—	142	—	3	—	46	16
Washington, D. C.	331,069	118	9	—	81	1	7	—	25	22
From 200,000 to 300,000 inhabitants:										
Jersey City, N. J.	267,779	81	—	1	—	—	—	3	—	9
Providence, R. I.	224,326	67	10	1	23	1	12	—	8	9
Seattle, Wash.	237,194	56	4	—	64	1	21	—	7	8
From 100,000 to 200,000 inhabitants:										
Bridgeport, Conn.	102,054	24	5	1	—	—	8	2	1	—
Cambridge, Mass.	104,839	—	6	2	49	1	2	—	7	3
Columbus, Ohio.	181,548	55	2	—	17	—	6	—	17	5
Dayton, Ohio.	116,577	33	3	—	1	—	2	—	—	4
Fall River, Mass.	119,295	63	6	2	66	4	23	2	6	5
Grand Rapids, Mich.	112,571	32	9	—	38	1	8	—	5	6
Lowell, Mass.	106,294	36	9	1	24	1	2	—	2	5
Nashville, Tenn.	110,364	43	—	—	13	1	—	—	9	6
Oakland, Cal.	150,174	64	2	—	—	—	1	—	1	—
Richmond, Va.	127,628	64	—	—	12	—	1	—	10	4
Spokane, Wash.	104,402	—	—	—	22	—	6	1	1	2
Toledo, Ohio.	168,497	65	3	1	49	—	9	1	5	1
Worcester, Mass.	145,986	48	3	—	30	—	5	—	13	5
From 50,000 to 100,000 inhabitants:										
Altoona, Pa.	52,127	15	3	—	—	—	3	1	1	2
Bayonne, N. J.	55,545	12	—	—	1	—	7	—	—	1
Brockton, Mass.	56,878	18	3	—	5	—	3	—	5	3
Camden, N. J.	94,538	—	7	—	24	—	4	—	6	—
Duluth, Minn.	78,466	20	1	—	64	1	2	—	6	1
Elizabeth, N. J.	73,409	21	4	—	14	—	—	—	6	1
Erie, Pa.	66,525	25	2	—	32	—	3	—	—	—
Evansville, Ind.	69,647	11	1	—	14	—	15	—	2	2
Harrisburg, Pa.	64,186	12	—	—	23	—	1	—	1	1
Hartford, Conn.	98,915	32	7	3	24	1	6	—	4	2
Hoboken, N. J.	70,324	—	3	—	—	—	5	—	12	2
Houston, Tex.	78,800	23	1	1	—	—	3	—	—	1
Johnstown, Pa.	55,482	26	14	3	32	—	2	—	—	2
Kansas City, Kans.	82,331	—	1	—	—	—	3	—	2	—
Lawrence, Mass.	85,892	10	—	—	10	—	2	—	1	3
Lynn, Mass.	89,336	22	1	—	32	1	6	—	3	2
Manchester, N. H.	70,063	20	2	—	3	—	1	—	2	2
New Bedford, Mass.	96,652	28	5	1	65	—	6	—	6	2
Passaic, N. J.	54,773	17	1	1	7	—	2	1	5	—
Peoria, Ill.	66,950	12	3	—	—	—	7	—	—	2
Reading, Pa.	96,071	33	3	—	17	—	4	1	2	1

Cases and Deaths Reported by Cities for Week Ended May 17, 1913—Contd.

Cities.	Popula- tion, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabitants—Continued.										
Saginaw, Mich.	50,510	13	2	—	8	—	4	—	1	—
St. Joseph, Mo.	77,403	9	1	—	100	—	2	—	2	—
Schenectady, N. Y.	72,826	22	1	—	15	1	20	3	—	3
South Bend, Ind.	53,684	18	1	—	11	—	4	1	—	3
Springfield, Ill.	51,678	21	1	1	6	—	—	—	—	4
Springfield, Mass.	88,926	27	4	—	18	—	5	—	3	1
Trenton, N. J.	96,815	53	6	—	5	—	16	—	9	9
Wilkes-Barre, Pa.	67,105	30	3	1	6	—	3	—	7	1
Yonkers, N. Y.	79,803	28	2	—	18	—	3	—	5	1
From 25,000 to 50,000 inhabitants:										
Atlantic City, N. J.	46,150	—	2	—	35	—	—	—	1	—
Auburn, N. Y.	34,668	8	—	1	7	—	4	—	3	—
Aurora, Ill.	29,807	8	—	—	—	—	1	—	—	—
Berkeley, Cal.	40,434	5	—	—	3	—	3	—	—	—
Binghamton, N. Y.	48,443	17	—	—	2	—	1	—	6	—
Brookline, Mass.	27,792	10	1	—	14	—	1	—	—	—
Chattanooga, Tenn.	44,604	—	1	—	—	—	—	—	1	—
Chelsea, Mass.	32,452	17	—	—	19	1	—	—	1	1
Chicopee, Mass.	25,401	—	1	—	—	—	2	—	2	2
Danville, Ill.	27,871	9	—	—	30	—	1	—	—	—
East Orange, N. J.	34,371	—	1	—	15	—	—	—	—	—
Elmira, N. Y.	37,176	7	—	—	2	—	—	—	—	1
Everett, Mass.	33,484	10	1	—	10	—	3	—	1	—
Fitchburg, Mass.	37,826	6	2	—	13	1	1	—	—	—
Haverhill, Mass.	44,115	8	—	—	6	—	1	—	4	—
Kalamazoo, Mich.	39,437	17	—	1	3	—	1	—	5	1
Knoxville, Tenn.	36,346	19	—	—	4	—	1	—	—	2
La Crosse, Wis.	30,417	3	—	—	—	—	—	—	—	—
Lancaster, Pa.	47,227	—	2	—	14	—	2	—	—	—
Lexington, Ky.	35,099	24	1	—	13	—	1	—	—	3
Lynchburg, Va.	29,494	16	—	—	6	—	—	—	1	1
Malden, Mass.	44,404	12	1	—	24	1	1	—	2	2
Mount Vernon, N. Y.	30,919	—	—	—	18	—	2	—	—	—
Newcastle, Pa.	36,280	—	1	—	15	—	—	—	—	—
Newport, Ky.	30,309	10	—	—	—	—	—	—	3	3
Newton, Mass.	39,806	8	—	—	12	—	2	—	1	—
Niagara Falls, N. Y.	30,445	9	1	—	10	—	5	1	—	1
Norristown, Pa.	27,875	14	—	1	1	—	—	—	—	—
Orange, N. J.	29,630	6	1	—	10	—	1	—	3	2
Pittsfield, Mass.	32,121	6	—	—	17	—	—	—	1	—
Portsmouth, Va.	33,190	8	—	—	3	—	—	—	—	1
Racine, Wis.	38,002	17	3	—	23	—	3	—	—	—
Roanoke, Va.	34,874	11	—	—	17	—	1	—	1	3
Sacramento, Cal.	44,696	17	—	—	4	—	1	—	—	1
South Omaha, Nebr.	26,259	6	—	—	—	—	—	—	—	—
Springfield, Ohio.	46,921	—	—	—	6	—	—	—	—	—
Superior, Wis.	40,384	12	—	—	—	—	2	—	—	3
Taunton, Mass.	34,259	13	—	—	2	—	1	—	1	1
Waltham, Mass.	27,834	7	1	—	7	—	1	—	—	1
West Hoboken, N. J.	35,403	—	—	—	8	—	5	—	2	—
Wheeling, W. Va.	41,641	12	1	—	3	—	—	—	1	1
Williamsport, Pa.	31,860	12	1	—	7	—	1	—	5	7
Wilmington, N. C.	25,748	14	2	—	6	—	—	—	—	—
York, Pa.	44,750	1	1	—	1	—	3	—	4	—
Zanesville, Ohio	28,026	9	1	—	—	—	1	—	—	1
Less than 25,000 inhabitants:										
Alameda, Cal.	23,833	5	—	—	2	—	—	—	1	—
Ann Arbor, Mich.	14,817	6	—	—	10	—	2	—	6	—
Beaver Falls, Pa.	12,191	—	3	—	7	—	—	—	—	—
Biddeford, Mass.	17,079	9	—	—	—	—	—	—	—	—
Braddock, Pa.	17,759	—	2	—	3	—	3	—	—	—
Cambridge, Ohio.	17,327	1	—	—	14	—	1	—	—	—
Clinton, Mass.	13,075	—	—	—	—	—	—	—	1	—
Columbus, Ind.	6,719	—	—	—	32	—	—	—	—	1
Concord, N. H.	21,477	12	—	—	13	—	—	—	—	—
Cumberland, Md.	21,839	14	1	—	2	1	—	—	1	2
Dunkirk, N. Y.	11,616	—	2	—	3	—	—	—	1	—
Franklin, N. H.	6,132	4	—	—	5	—	—	—	—	2
Galesburg, Ill.	22,089	2	—	—	—	—	—	—	1	1
Harrison, N. J.	14,489	2	—	—	—	—	1	—	—	—
Kearny, N. J.	18,659	9	1	—	5	—	3	—	—	—
La Fayette, Ind.	20,081	6	—	—	—	—	—	—	—	—

Cases and Deaths Reported by Cities for Week Ended May 17, 1913—Contd.

Cities.	Popula- tion, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Less than 25,000 inhabitants— Continued.										
Marlboro, Mass.	13,606	4			24				1	
Massillon, Ohio	23,830	1	1							
Medford, Mass.	23,150	6			5		1			
Melrose, Mass.	15,715	4			4				1	
Moline, Ill.	24,190				1					1
Montclair, N. J.	21,450	7					1		2	2
Morristown, N. J.	12,507	4	1							
Muscatine, Iowa	16,000	6			13					
Nanticoke, Pa.	18,857	2	1				2			
Newburyport, Mass.	19,240	5	3		20					
North Adams, Mass.	22,019	5							2	
Northampton, Mass.	23,310	4			1		2		1	
Plainfield, N. J.	23,550	5			1		6	2		
Pottstown, Pa.	16,696	9			21					1
Rutland, Vt.	6,719						1	1		
Saratoga Springs, N. Y.	13,534	6			6		2			2
South Bethlehem, Pa.	13,241	4			4		1			
Steelton, Pa.	14,479	9			1		1		1	
Wilkinsburg, Pa.	18,594	7	6		2		4	1		
Woburn, Mass.	14,254	5						1		

IN INSULAR POSSESSIONS.

HAWAII.

Plague-Infected Rat Found.

During the week ended May 3, 1913, a plague-infected rat was found at Honokaa.

Examination of Rodents.

Rats and mongoose have been examined in Hawaii, as follows: Week ended May 10, 1913, at Honolulu, 367; no plague infection found; week ended May 3, 1913, at Hilo, 1,102; no plague infection found; at Honokaa, 1,822.

PORTO RICO.

Rodents Collected and Examined.

Passed Asst. Surg. Creel reports that during the week ended May 10, 1913, there were examined 1,461 rodents, collected from various points in Porto Rico, and that of these, 465 were collected from various parts of San Juan municipality. None was found infected with plague.

FOREIGN REPORTS.

AUSTRALIA.

New South Wales—Communicable Diseases.

During the two weeks ended March 31, 1913, communicable diseases were reported by the department of New South Wales as follows: Diphtheria, 284 cases, with 16 deaths; poliomyelitis (infantile paralysis), 6 cases; scarlet fever, 45 cases; typhoid fever, 135 cases, with 12 deaths. The population of New South Wales is 1,395,690.

BRAZIL.

Para—Yellow Fever on Vessel.

Consul Pickerell reports the arrival at Para, May 6, of the steamship *Mararia* from Manaus with a case of yellow fever on board. The case terminated fatally May 9.

CHINA.

Typhus Fever.

Acting Asst. Surg. Ransom, at Shanghai, reports April 29 the prevalence of typhus fever in the interior of the province at ports on the Yangtze.

Hongkong—Plague.

At Hongkong 24 cases of plague were notified May 28, 1913. On June 22 there were notified at Hongkong 17 cases of plague.

MEXICO.

Progreso—Dengue Fever.

A case of dengue fever was notified at Progreso May 10, 1913.

June 6, 1913

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PERU.

Status of Plague.

MONTH OF JANUARY, 1913.

Departments.	Cases Jan. 1, 1913.	New cases.	Deaths.	Remain- ing Jan. 31, 1913.
Ancachs.....	.....	5	2	3
Arequipa.....	7	3	4	1
Callao.....	5	.....	.....	2
Lambayeque.....	9	71	39	23
Libertad.....	26	40	18	21
Lima.....	2	17	8	7
Piura.....	2	12	6	6

MONTH OF FEBRUARY, 1913.

Departments.	Cases Feb. 1, 1913.	New cases.	Deaths.	Remain- ing Feb. 28, 1913.
Arequipa.....	1	3	2	1
Callao.....	2	2	.....	2
Lambayeque.....	23	69	27	34
Libertad.....	21	27	13	19
Lima.....	7	12	8	7
Piura.....	1	5	4	1

MONTH OF MARCH, 1913.

Departments.	Cases Mar. 1, 1913.	New cases.	Deaths.	Remain- ing Mar. 31, 1913.
Ancachs.....	.....	3	1	.....
Arequipa.....	1	8	4	4
Callao.....	2	12	9	12
Lambayeque.....	34	28	15	24
Libertad.....	19	40	21	22
Lima.....	7	12	7	9
Piura.....	1	3	3	.....

APRIL 1 TO 27, 1913.

Localities.	Cases Apr. 1, 1913.	New cases.	Deaths.	Remain- ing Apr. 27, 1913.
Lima.....	12	6	6	3
Chiclayo.....	28	2	3	8
Trujillo.....	16	6	7	11
San Pedro.....	7	6	6	5
Mollendo.....	4	3	4	1

¹ One unknown.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.**Reports Received During Week Ended June 6, 1913.****CHOLERA.**

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Amoy.....	Apr. 25.....			Present.
India:				
Bassein.....	Apr. 6-12.....	20	14	
Bombay.....	Apr. 20-May 3.....	3	3	
Moulmine.....	Apr. 6-12.....	3	3	
Negapatam.....	do.....	8	8	
Rangoon.....	Mar. 1-31.....	8	8	
Turkey in Europe:				
Kavala.....	Apr. 1.....		1	

YELLOW FEVER.

Brazil:				
Manaos.....	May 4-10.....	2	2	Case p. 953 from the Brazilian steamer Mararia May 6 and placed in observation hospital where he died May 9.
Para.....				
Ecuador:				
Bucay.....	Apr. 1-30.....	2	1	
Duran.....	do.....	1		
Guayaquil.....	do.....	34	15	
Milagro.....	do.....	9	4	
Narangito.....	do.....	3	2	
Yaguachi.....	do.....	1		

PLAGUE.

Arabia:				
Aden.....	May 7-13.....	14	10	
Brazil:				
Rio de Janeiro.....	Apr. 13-26.....	2	1	Apr. 25, present in Chaochowfu and vicinity, Chaoyang, Cheng-hai, Kityang, Fungshun, Mi-ou, San-ho-pa, and Puning.
China:				
Swatow.....	Apr. 25.....	3	2	
Ecuador:				
Alausi.....	Apr. 1-30.....	5	2	
Guayaquil.....	do.....	6	2	
Huigra.....	do.....	8	2	
Egypt.....				Apr. 24-May 8: Cases, 63; deaths, 37.
Alexandria.....	Apr. 24-May 4.....	3	4	
Provinces—				
Assiout.....	May 1.....	1	1	
Behera.....	Apr. 9-May 5.....	1	1	
Beni Souef.....	Mar. 7-May 4.....	2	1	
Fayoum.....	Apr. 19-May 6.....	6	5	
Girgeh.....	Apr. 10-30.....	12	12	
Menouf.....	Apr. 25-May 2.....	2		
Minieh.....	Apr. 24-30.....	2	1	
Hawaii:				
Pauhau.....	May 8.....		1	Case reported, p. 954.
India:				
Bombay.....	Apr. 20-May 3.....	494	429	
Karachi.....	Apr. 13-May 3.....	76	63	
Rangoon.....	Mar. 1-31.....	144	138	
Japan:				
Taiwan—				
Kagi.....	Mar. 25-Apr. 12.....	27	27	
Mauritius.....	Feb. 28-Mar. 13.....	7	1	
Morocco:				
Mehedia.....	Apr. 24.....	4		Among the military.
Peru:				
Departments—				
Arequipa.....	Jan. 1-31.....	3	4	
Ancachs.....	do.....	5	2	
Lambayeque.....	do.....	71	39	
Libertad.....	do.....	40	18	
Lima.....	do.....	17	8	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received During Week Ended June 6, 1913—Continued.****PLAGUE—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Peru—Continued.				
Departments—Continued.				
Piura.....	Jan. 1-31.....	12	6	
Arequipa.....	Feb. 1-28.....	3	2	
Callao.....	do.....	2		
Lambayeque.....	do.....	69	27	
Libertad.....	do.....	27	13	
Lima.....	do.....	12	8	
Piura.....	do.....	5	4	
Ancachs.....	Mar. 1-31.....	3	1	
Arequipa.....	do.....	8	4	
Callao.....	do.....	12	9	
Lambayeque.....	do.....	28	15	
Libertad.....	do.....	40	21	
Lima.....	do.....	12	7	
Piura.....	do.....	3	3	
Chiclayo.....	Apr. 1-27.....	2	3	
Lima.....	do.....	6	6	
Trujillo.....	do.....	6	7	
San Pedro.....	do.....	6	6	
Mollendo.....	do.....	3	4	
Russia:				
Don Territory.....	Nov. 1-Apr. 2....	40	21	In Popova, Kiraejevo, and vicinity, including report p. 1094.
Turkey in Asia:				
Jiddah.....	Apr. 27-May 10....	3	3	

SMALLPOX.

Arabia:				
Aden.....	Apr. 29-May 5....	2		
Brazil:				
Pernambuco.....	Apr. 1-15.....		1	
Rio de Janeiro.....	Apr. 13-19.....	12	5	
Canada:				
Montreal.....	May 19-24.....	4		
Ottawa.....	May 11-17.....	5		
St. Johns.....	May 18-24.....	1		
Winnipeg.....	May 11-17.....	6		
China:				
Chungking.....	Apr. 6-12.....			Present.
Egypt:				
Alexandria.....	Apr. 23-May 13....	18	8	
Cairo.....	Apr. 2-23.....	13	1	
France:				
Marseille.....	Apr. 1-30.....		5	
Paris.....	Apr. 26-May 3....	2		
Great Britain:				
London.....	May 4-10.....	1		
Greece:				
Patras.....	May 4-11.....		1	
Germany.....	May 4-17.....	9		
India:				
Bombay.....	Apr. 20-May 3....	42	26	
Karachi.....	Apr. 13-May 3....	28	14	
Rangoon.....	Mar. 1-31.....	125	34	
Italy:				
Naples.....	May 4-10.....	3		
Mauritius ¹	Mar. 22.....			Epidemic
Mexico:				
Hermosillo.....	May 11-24.....	9	2	
Monterey.....	May 2-8.....		2	
Veracruz.....	May 2-17.....	7		
San Luis Potosi.....	Mar. 16-22.....	1	1	
Portugal:				
Lisbon.....	Apr. 26-May 3....	1		
Russia:				
Moscow.....	Apr. 13-19.....	7	1	
St. Petersburg.....	Apr. 13-26.....	6		
Spain:				
Almeria.....	Apr. 1-30.....		1	
Seville.....	do.....		1	

¹ From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, May 21, 1913

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received During Week Ended June 6, 1913—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Switzerland:				
Cantons—				
Basel.....	Apr. 20-May 13....	6		
Vaud.....	Apr. 27-May 3....	1		
Turkey in Europe:				
Constantinople.....	May 4-10.....		8	
Saloniki.....	May 5-11.....	1	2	

Reports Received from Dec. 27, 1912, to May 30, 1913.**CHOLERA.**

Bulgaria:				
Eski Saghara.....	Dec. 9.....	2		
Sofia.....	Nov. 21-Dec. 16....	6	1	
Shumia.....	Dec. 30.....	18		
China:				
Foochow.....	Nov. 20-Dec. 2....			Isolated cases.
Hongkong.....	Mar. 23-29.....	5	5	Among Chinese.
Shanghai.....				Total 1912: Cases, 10, in the foreign settlement.
Dutch East Indies:				
Borneo—				
Bandermasin.....	Nov. 22-30.....	5	5	
Pontrank.....	Oct. 6.....	1		
Samarinda.....	Oct. 9-Nov. 2.....	26	25	
Singkawang.....	Oct. 8-Nov. 1.....	2	2	
Celebes—				
Batangmata.....	Mar. 8-14.....			Present.
Java—				
Batavia.....	Nov. 9-Dec. 31....	40	28	And Tanjong Priok, the harbor.
Do.....	Jan. 19-Mar. 29....	145	111	Mar. 31-Apr. 5, 11 fatal cases.
Madison.....	Sept. 15-Nov. 9....	192	105	
Do.....	Jan. 31-Feb. 22....	15	10	
Megalang.....	Oct. 7-12.....	9	6	
Paseroean Residency..	Sept. 20-26.....	2	1	
Samarang.....	July 19-Dec. 26....	591	485	
Do.....	Dec. 27-Feb. 27....	10	11	
Surabaya.....	Oct. 16-Nov. 28....	4	3	
Sumatra—				
Air Tiris.....	Dec. 3-22.....	11	11	
Benkoelen.....	Nov. 3-30.....	3	1	
Koeoh.....	Dec. 3-15.....	4	9	
Jambi.....	Sept. 18-24.....	1		
Roembo.....	Dec. 3-15.....	2	2	
Telokbetong.....	Nov. 1-Dec. 31....	181	20	
India:				
Bassein.....	Jan. 25-Apr. 5....	122	108	
Bombay.....	Nov. 17-Apr. 5....	218	154	
Calcutta.....	Nov. 9-Mar. 8....		573	
Cochin.....	Oct. 10-Nov. 9....	6	6	
Do.....	Feb. 17-23.....	5	5	
Madras.....	Nov. 24-Apr. 5....	38	37	
Moulmine.....	Feb. 23-Mar. 29....	5	5	
Negapatam.....	Nov. 11-Mar. 8....	34	34	
Rangoon.....	Nov. 1-Dec. 28....	3	3	
Do.....	Dec. 29-Mar. 1....	30	28	
Indo-China: Saigon.....	Aug. 20-Oct. 27....	42	38	
Japan.....				Total year 1912: Cases, 2,722; deaths, 1,678, exclusive of Taiwan. Epidemic, Aug. 1, 1912-Mar. 3, 1913: Cases, 2,634; deaths, 1,696, including cases p. 2233, Vol. XXVII, and p. 859, Vol. XXVIII.
Prefectures—				
Akita.....	Dec. 2.....	1	1	
Chiba.....	Nov. 21-Mar. 3....	116	83	
Ehime.....	Sept. 21-Dec. 2....	52	21	
Fukuoka.....	Aug. 1-Dec. 2....	816	531	
Fukushima.....	Dec. 5.....	1		
Hiogo.....	Sept. 27-Nov. 24....	137	100	
Hiroshima.....	Sept. 21-Nov. 23....	49	32	
Ibariki.....	Dec. 6.....	2	2	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1912, to May 30, 1913—Continued.****CHOLERA—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Japan—Continued.				
Prefectures—Continued.				
Iwate.....	Dec. 16.....	2	1	
Kagawa.....	Oct. 12–Nov. 21...	15	10	
Kagoshima.....	Sept. 21–Oct. 18...	11	5	
Kanagawa.....	Sept. 25–Feb. 4....	122	94	Including Yokohama.
Yokohama.....	Sept. 29–Jan. 9....	39	.....	Sept. 25–Dec. 7: 9 cases from vessels.
Kochi.....	Oct. 19–Dec. 4....	25	14	
Kioto.....	Sept. 21–Nov. 1....	5	5	
Kumamoto.....	do.....	15	9	
Minami Tokaki gun....	Sept. 15–Dec. 2....	.....	.....	40 cases not included in total.
Nagasaki.....	do.....	188	112	Including Nagasaki city, and with outlying islands, 134 deaths.
Oita.....	Sept. 21–Dec. 5....	38	21	
Okayama.....	Sept. 21–Nov. 22...	67	39	
Osaka.....	Sept. 21–Mar. 3....	165	108	
Saga.....	Sept. 21–Dec. 3....	109	76	
Saftama.....	Oct. 12–18.....	3	2	
Shidzuoka.....	Oct. 19–Mar. 3....	90	33	
Shimane.....	To Mar. 3.....	2	.....
Taiwan (Formosa).....	.....	.....	.....	Total year 1912: Cases, 333; deaths, 256.
Tokyo.....	Sept. 23–Feb. 4....	314	217	
Tokushima.....	Sept. 15–Dec. 1....	8	5	
Wakamatsu.....	Nov. 29.....	.....	.....	1 case not included in total.
Wakayama.....	Oct. 19–Nov. 16...	13	12	
Yamaguchi.....	Sept. 21–Nov. 26...	267	162	
Yamanchi.....	Feb. 3.....	1	1	
Russia:				
Odessa.....	Jan. 8–21.....	5	2	Nov. 18–20: 1 case from s. s. Bosnian from Constantinople. Confined in the quarantine barracks.
Servia:				
Pirot.....	Apr. 10.....	5	.....	Among returning soldiers and prisoners.
Siam:				
Bangkok.....	Oct. 13–Mar. 22...	.....	8	
Straits Settlements:				
Singapore.....	Nov. 17–23.....	2	2	
Do.....	Jan. 27–Apr. 12...	6	2	
Turkey in Asia.				
Adana—	.....	.....	.....	Total, Nov. 17–23: Cases, 160; deaths, 218.
Adana.....	Nov. 17–Dec. 2....	2	2	
Aleppo—	.....	.....	.....
Aleppo.....	Nov. 24–Dec. 2....	5	3	
Alexandretta.....	do.....	3	2	
Angora—	.....	.....	.....
Angora.....	Nov. 24–Dec. 11...	29	23	
Balikesir.....	Nov. 24–Dec. 2....	.....	1	
Beirut—	.....	.....	.....
Merdjijoun.....	Dec. 3–11.....	.....	15	
Tavariyeh.....	Dec. 13–22.....	.....	.....	Present.
Brusa.....	Nov. 17–Dec. 11...	26	38	
Castamoni.....	Nov. 17–Dec. 2....	6	4	
Dierbekir.....	do.....	8	2	
Hedjaz—	.....	.....	.....
Jedda.....	Nov. 25–Dec. 14...	395	393	Among returning pilgrims.
Medina.....	Dec. 3–11.....	.....	6	
Mekka.....	Nov. 17–23.....	111	172	Dec. 3–11: Deaths, 3,007.
Ismidt.....	Nov. 17–Dec. 2....	3	1	
Kartal.....	Dec. 30–Feb. 12...	9	3	
Khodavendikar—	.....	.....	.....
Karassi.....	Jan. 30–Feb. 12...	.....	2	
Mosul.....	Nov. 17–Dec. 2....	.....	2	
Sinope.....	Dec. 3–11.....	1	4	
Smyrna.....	Nov. 17–Dec. 2....	3	1	
Syria—				
Halfa.....	Dec. 21.....	.....	1	
Tiberias.....	Dec. 3–25.....	129	68	
Tarsus.....	Nov. 24–Dec. 2....	2	1	
Turkey in Europe:				
Constantinople.....	Dec. 3–Jan. 28....	1,598	787	Total, Nov. 5–Jan. 28: Cases, 2,515; deaths, 1,245.
Do.....	Mar. 12–Apr. 28....	15	5	New outbreak.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1912, to May 30, 1913—Continued.****CHOLERA—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Zanzibar	Nov. 8-Dec. 21....	131	130	Total, Aug. 5-Dec. 23: Cases, 943; deaths, 912, including previous reports from Mwera, Chwaka, and Mokoton. Chwaka district, Oct. 4-Dec. 31, 332 cases, not included in previous reports.
At sea.....				Nov. 18-20: 1 fatal case on s. s. Bosnian, en route from Constantinople to Odessa.

YELLOW FEVER.

Brazil:				
Bahia.....	Jan. 24-Apr. 5....	16	8	
Manaos.....	Jan. 5-Apr. 19....	23	23	
Para.....				May 10, 1 fatal case.
Pernambuco.....				Year 1912: Deaths, 41.
British Gold Coast:				
Akkra.....	Mar. 22.....			Present. Apr. 26 free.
Ecuador:				
Agua Piedra.....	Dec. 1-31.....	7	4	
Do.....	Jan. 1-Mar. 31....	10	6	
Bucay.....	Nov. 15-Dec. 31....	3	2	
Do.....	Jan. 1-Mar. 31....	4	2	
Duran.....	Nov. 1-Dec. 31....	3	3	
Do.....	Jan. 1-Mar. 31....	15	9	
Guayaquil.....	Nov. 1-Dec. 31....	25	16	
Do.....	Jan. 1-Mar. 31....	120	64	Apr. 1-30 in Guayaquil and vicinity: Cases, 50; deaths, 22.
Millagro.....	Nov. 1-Dec. 31....	2	2	
Do.....	Jan. 1-Feb. 28....	19	11	
Naranjito.....	Nov. 1-Dec. 31....	3	2	
Do.....	Jan. 1-Mar. 31....	19	10	
Mexico:				
Merida.....	Apr. 2-10.....	1	1	From Campeche.
Senegal:				
Dakar.....	Dec. 7.....			Present.
Venezuela:				
Caracas.....	Nov. 1-Dec. 31....	9	2	In September 2 deaths and in October 1 death not previously reported. Feb. 7, 1 case.
Do.....	Jan. 1-31.....	2		

PLAGUE.

Afghanistan:				
Tchebel-Bagdareh.....	Sept. 1-30.....			And vicinity, 100 deaths daily. Present to Oct. 29.
Arabia:				
Aden.....	Apr. 9-May 6.....	27	17	
Oran.....				
Debai.....	Feb. 16.....			Present.
Argentina:				
Herrera.....	Feb. 22.....	9	6	Southeastern part of Entre Rios.
Rosario.....	Jan. 4.....	4	1	Endemic.
Brazil:				
Bahia.....	Jan. 12-Apr. 5....	20	8	
Pernambuco.....	Nov. 1-Jan. 31....		11	Year 1912: Deaths, 20.
Rio de Janeiro.....	Nov. 3-Mar. 1....	24	9	Year 1912: Cases, 21. Mar. 22, 3 cases in isolation hospital.
Santos.....	Dec. 1.....	2	2	
British East Africa:				
Dagoretti.....	Jan. 14-Feb. 26....		17	
Do.....	Jan. 14-Feb. 5....	1		
Khambui.....	Nov. 16-Dec. 8....	2		
Do.....	Feb. 27-Mar. 31....	1		
Kisumu.....	Dec. 8-28.....	7		
Do.....	Jan. 14-Mar. 31....	9		
Mombasa.....	Oct. 1-Dec. 25....	16	12	Free Nov. 18.
Do.....	Feb. 6-26.....	5		
Nairobi.....	Nov. 16-Mar. 31....	21	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1912, to May 30, 1913—Continued.****PLAGUE—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Canary Islands:				
Teneriffe—				
Santa Cruz.....	Feb. 21-27.....		5	
Chile:				
Antofagasta.....	Feb. 12.....			Present.
Iquique.....	Jan. 8-Mar. 8.....	11	5	
Taltal.....	Oct. 22-28.....	3		
China:				
Amoy.....	Apr. 6-12.....		1	Jan. 17-Apr. 15, few sporadic cases. Pneumonic form present and in vicinity. May 26, epidemic.
Kulangsu.....	do.....			Increasing.
Hai An.....	Mar. 8.....			Present in pneumonic form in 2 localities in vicinity about 48 miles from Amoy.
Hoihow.....	Nov. 1-30.....			Present.
Kulangsu.....	Jan. 17.....	3		International settlement of Amoy.
Hongkong.....	Jan. 12-Apr. 19.....	18	18	Total January to September, 1912: Cases, 1,848; deaths, 1,728. May 14, still present.
Manchuria.....	Dec. 14.....			Present along the railway between Harbin and Chang-Chun.
Pakhoi.....	Dec. 1-31.....	30		Feb. 1, from 10 to 12 deaths daily.
Shanghai.....	Nov. 18-Dec. 15.....		2	Dec. 18, present in vicinity of the French settlement. Total 1912: Cases, 9, among natives.
Do.....	Mar. 31-Apr. 6.....		1	
Swatow.....	Apr. 3.....			Present, and Jan. 9 present in vicinity.
Colombia:				
Santa Marta.....	Apr. 11.....			Not bacteriologically confirmed.
Dutch East Indies.....				Total Jan. 1-Mar. 31: Cases, 1,636; deaths, 1,559.
Java—				
Kediri.....	Oct. 6-Dec. 31.....	406	377	
Do.....	Jan. 1-Mar. 31.....	443	201	
Madison.....	Oct. 6-Jan. 1.....	98	96	
Do.....	Jan. 1-Mar. 31.....	156	146	
Malang.....				Total, year 1912: Cases, 1,477; deaths, 1,406, among natives, including Pasoeroean Residency.
Do.....	Jan. 1-Mar. 31.....	949	928	
Surabaya.....	Oct. 6-Jan. 4.....	43	43	
Do.....	Jan. 1-Mar. 31.....	47	46	
Ecuador:				
Duran.....	Nov. 1-Dec. 31.....	4	1	
Do.....	Jan. 1-Mar. 31.....	9	6	
Guayaquil.....	Nov. 1-Dec. 31.....	139	52	
Do.....	Jan. 1-Mar. 31.....	139	75	And vicinity, Jan. 1-Feb. 24: Cases, 123; deaths, 61. Apr. 1-30, in Guayaquil and vicinity: Cases, 19; deaths, 6.
Milagro.....	Dec. 1-31.....	8	1	
Do.....	Jan. 1-Mar. 31.....	10	2	
Egypt.....				Total, Jan. 1-Dec. 31, 1912: Cases 884; deaths, 441. Jan. 1-Apr. 23, 1913: Cases, 272; deaths, 139.
Alexandria.....	Mar. 2-Apr. 15.....	36	26	
Cairo.....	Dec. 30.....	1	1	
Port Said.....	Dec. 29.....	1	1	
Do.....	Jan. 1-Mar. 5.....	4	2	
Provinces—				
Assiout.....	Jan. 22-Apr. 21.....	33	30	
Behera.....	Nov. 29-Dec. 12.....	2	1	
Do.....	Mar. 10-Apr. 8.....	5	5	
Benisouef.....	Jan. 22-Mar. 6.....	6	4	
Charkieh.....	Nov. 29-Dec. 12.....	3	2	
Do.....	Jan. 2-Mar. 22.....	16	7	
Fayoum.....	Jan. 19-Apr. 18.....	37	16	
Galloubeh.....	Jan. 1-Apr. 23.....	4	2	
Garbieh.....	do.....	7	2	
Do.....	Nov. 23-Dec. 17.....	3		
Girgeh.....	Jan. 1-Apr. 14.....	2	2	
Do.....	Dec. 21-25.....	1	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 27, 1912, to May 30, 1913—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Egypt—Continued.				
Provinces—Continued.				
Gizeh.....	Jan. 1-Apr. 21.....	21	5	
Keneh.....	Apr. 15.....	1		
Menouf.....	Jan. 1-Apr. 24.....	46	22	
Do.....	Oct. 1-Dec. 31.....	13	7	
Minieh.....	Nov. 28-Dec. 29.....	7	4	
Do.....	Jan. 23-Apr. 23.....	34	7	
Sohag.....	Apr. 4.....	15	6	
Hawaii:				
Honokaa.....	May 2.....	1	1	
Kukuihaele.....	Jan. 11-31.....	2	2	
Paauihau.....	May 8.....	1		
India:				
Bombay.....	Nov. 17-Apr. 12.....	1,127	845	
Calcutta.....	Nov. 9-Mar. 22.....		151	
Madras.....	Dec. 29-Jan. 4.....	1	1	
Karachi.....	Nov. 19-Dec. 28.....	14	13	
Do.....	Mar. 2-Apr. 12.....	48	39	
Rangoon.....	Oct. 1-Nov. 30.....	68	68	
Do.....	Dec. 29-Mar. 1.....	205	199	
Provinces.....				Total, Oct. 27-Dec. 28: Cases, 25,212; deaths, 19,863.
Delhi.....	Oct. 27-Dec. 28.....	31	14	
Bombay.....	do.....	6,785	5,121	
Madras.....	do.....	1,833	1,337	
Bengal.....	do.....	60	59	
Bihar and Orissa.....	do.....	1,269	1,025	
United Provinces.....	do.....	7,844	6,001	
Punjab.....	do.....	952	709	
Burma.....	do.....	95	85	
Central Provinces.....	do.....	404	301	
Mysore.....	do.....	1,506	1,114	
Hyderabad.....	do.....	1,498	1,212	
Central India.....	do.....	70	60	
Rajputana.....	do.....	2,862	2,824	
Kashmir.....	do.....	3	1	
Provinces.....				Total, Dec. 29-Apr. 5: Cases, 108,835; deaths, 91,792.
Delhi.....	Dec. 29-Apr. 5.....	155	116	
Bombay.....	do.....	6,896	5,245	
Madras.....	do.....	2,448	1,854	
Bengal.....	do.....	398	376	
Bihar and Orissa.....	do.....	19,963	16,405	
United Provinces.....	do.....	64,303	55,778	
Punjab.....	do.....	7,232	5,821	
Burma.....	do.....	1,960	1,762	
Central Provinces.....	do.....	664	486	
Mysore.....	do.....	1,821	1,379	
Hyderabad.....	do.....	1,221	1,005	
Central India.....	do.....	58	43	
Rajputana.....	do.....	1,646	1,486	
Kashmir.....	do.....	60	35	
Northwest Provinces.....	Dec. 29-Feb. 1.....	1	1	
Indo-China: Saigon.....	Aug. 20-Apr. 7.....	68	42	
Japan:				
Taiwan (Formosa).....				Total, year 1912: Cases, 223; deaths, 185.
Kagi.....	Mar. 18-24.....	41	18	Apr. 2, 10 cases.
Mauritius.....	Oct. 11-Feb. 6.....	253	165	Feb. 27, 1 case.
Morocco: Rabat.....	Nov. 1.....	3		Among the military.
New Caledonia: Numea.....	Sept. 17-Dec. 2.....	62	32	7 cases with 2 deaths among Europeans.
Persia: Bushir.....	Apr. 13-19.....	13	12	
Peru:				
Departments—				
Ancachs.....	July 1-31.....	4		
Do.....	Aug. 1-31.....	4	3	
Arequipa.....	July 1-Aug. 31.....	12	5	Mollendo, Nov. 17-Apr. 12: Cases, 18; deaths, 9.
Callao.....	July 1-31.....	1	1	Present in September; Dec. 2-Jan. 12: Cases, 7.
Ferrenaje.....	Dec. 23-Jan. 12.....	1		
Ica.....	do.....	1		
Lambayeque.....	Dec. 2-22.....	7		Present in September.
Jayanca.....	do.....			Present.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1912, to May 30, 1913—Continued.****PLAGUE—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Peru—Continued.				
Departments—Continued.				
Libertad.....	July 1-Aug. 31....	20	9	Huamachuco, Mar. 23, present; Trujillo, Mar. 25, 15 cases in the lazaretto.
Cosma.....	Dec. 2-22.....			Present.
Paijan.....	do.....			Do.
Salaverry.....	Dec. 23-Jan. 12.....	1		
San Pedro.....	Dec. 2-Jan. 12.....	27		
Trujillo.....	do.....	44		
Lima.....	July 1-31.....	3	2	
Do.....	Aug. 1-31.....	4	2	Dec. 2-22: Cases, 2.
Piura—				
Catacaos.....	Dec. 2-Jan. 12.....			Present.
Paíta.....	do.....			Do.
Piura.....	Dec. 23-Jan. 12.....			Do.
Sulanna.....	Dec. 2-22.....			Do.
Philippine Islands:				
Manila.....	Nov. 10-Mar. 29.....	18	14	
Provinces.....				Third quarter, 1912: Cases, 8; deaths, 7. Fourth quarter, 1912: Cases, 39; deaths, 33. Jan. 1-Mar. 8: Cases, 5; deaths, 5.
Russia:				
Don, territory.....	Nov. 1-Jan. 12.....			In 6 localities: 38 cases, with 22 deaths.
Hutor Popova (estate).....	Nov. 1-15.....	20	12	Esaul district.
Libau.....	Mar. 1-31.....		1	
Moscow.....	Dec. 29-Jan. 11.....	3	1	
Transbaikal district—				
Verneudinsk.....	Oct. 18-28.....	3	3	Near Nerchinsk.
Trans-Caspian Ter., Merv.....	Dec. 9-21.....	29	29	Pneumonic.
Siam: Bangkok.....	Jan. 5-Mar. 22.....		27	
Turkey in Asia: Jiddah.....	Mar. 10-Apr. 26.....	26	23	

SMALLPOX.

Arabia: Aden.....	Jan. 14-Apr. 21.....	13	2	
Abyssinia: Adis Ababa.....	Nov. 24-Dec. 21.....			Present.
Algeria:				
Departments—				
Algiers.....	Oct. 1-31.....	11		
Constantine.....	do.....	11		
Do.....	Feb. 1-28.....	12		
Oran.....	Oct. 1-Dec. 31.....	170	10	
Do.....	Jan. 1-Feb. 28.....	25	5	
Argentina:				
Buenos Aires.....	Nov. 1-Dec. 31.....		7	
Do.....	Feb. 1-28.....		2	
Australia:				
Darwin.....	Feb. 12.....			1 case in quarantine from s. a. Eastern en route from Japan to Sydney.
Austria-Hungary:				
Bohemia.....	Apr. 13-19.....	2		
Dalmatia.....	Feb. 9-15.....	1		
Galicia.....	Nov. 10-Dec. 7.....	3		
Do.....	Apr. 15-26.....	3		
Fiume.....	Jan. 14-Apr. 24.....	7	1	
Moravia.....	Jan. 17-Apr. 21.....	3		
Trieste.....	Dec. 8-Apr. 21.....	55		
Belgium: Antwerp.....	Mar. 24-31.....	1		Returning travelers.
Brazil:				
Para.....	Dec. 8-Feb. 1.....	2		
Pernambuco.....	Nov. 1-Mar. 31.....		185	
Rio de Janeiro.....	Nov. 3-Apr. 12.....	82	21	Year 1912: Deaths, 762.
British Columbia: Vancouver.....	Feb. 2-Mar. 1.....	2		
British East Africa:				
Mombasa.....	Dec. 1-31.....	17	10	
Do.....	Feb. 1-28.....	16	3	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 27, 1912, to May 30, 1913—Continued.

SMALLPOX—Continued.

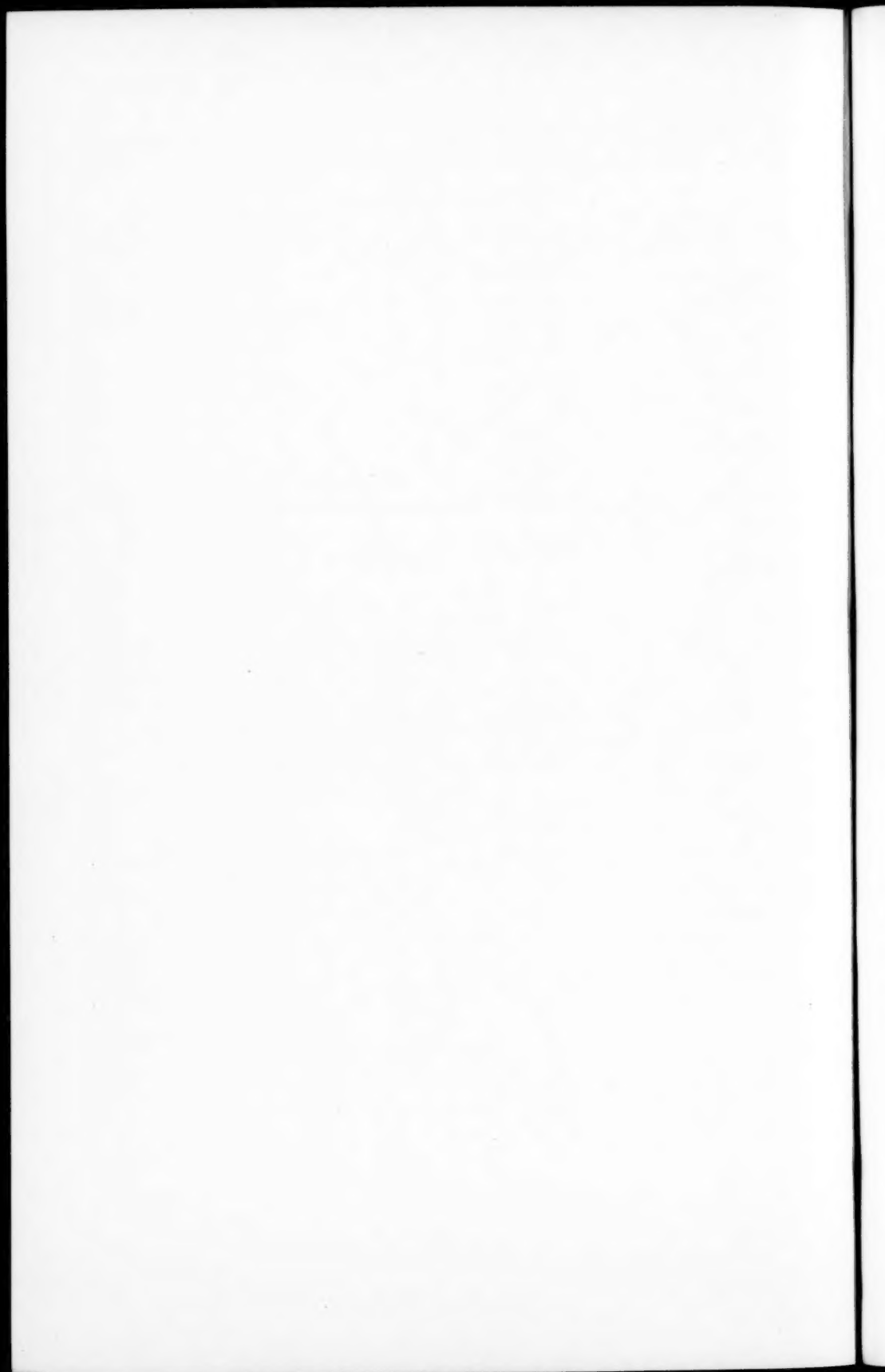
Places.	Date.	Cases.	Deaths.	Remarks.
Canada:				
Provinces—				
British Columbia—				
Fernie.....	Feb. 23-Mar 1.....	12		Apr. 22, 1 case in vicinity.
Vancouver.....	Apr. 13-25.....	2		
Victoria.....	May 4-10.....	2		
Manitoba—				
Winnipeg.....	Mar 30-Apr. 19.....	11		
Ontario—				
Cornwall.....	Mar. 16-22.....	2		
Fort William.....	Mar. 31-Apr. 16.....	4		
Hamilton.....	Jan. 1-Mar. 31.....	60		
Niagara Falls.....	Feb. 1-Apr. 21.....	21		
Ottawa.....	Jan. 4-May 3.....	45		
Port Arthur.....	Mar. 16.....	1		
Sault de St. Marie.....	May 4-10.....	1		
Toronto.....	Dec. 1-May 17.....	25		
Windsor.....	Feb. 9-Apr. 26.....	12		
Quebec—				
Grosse Isle Quarantine.				May 15, 1 case on s. s. Canada from Trieste, via Patras, Naples, and Lisbon.
Montreal.....	Dec. 15-May 10.....	172	1	
Quebec.....	do.....	35		
St. Johns.....	Jan. 12-May 10.....	26	1	
Chile:				
Punta Arenas.....	Oct. 31-Nov. 30.....	3		Oct. 31, 1 case in vicinity.
Do.....	Jan. 1-31.....	1		
China:				
Amoy.....	Mar. 15-Apr. 12.....		2	
Kulangsü.....	Jan. 12-Feb. 29.....	1	1	Apr. 5, present.
An Kho.....	Jan. 4.....			Epidemic; 2 days' journey from Amoy.
Chungking.....	Nov. 3-Jan. 22.....			Present.
Dalny.....	Jan. 12-18.....	1	1	
Hankow.....	Dec. 29-Jan. 4.....	1		
Harbin.....	Dec. 1-31.....	6		
Do.....	Jan. 17-Feb. 13.....	2		
Hoihow.....	Jan. 3.....			Do.
Hongkong.....	Nov. 24-Apr. 19.....	78	54	
Nanking.....	Dec. 7-Mar. 8.....			Do.
Shanghai.....	Nov. 18-27.....	51	183	Deaths among natives. Year 1912: Cases, 144.
Tientsin.....	Nov. 17-Apr. 19.....	9	20	
Costa Rica: Limon.....	Feb. 1.....	2	2	
Dutch East Indies:				
Java—				
Batavia.....	Nov. 9-Mar. 15.....	42	12	Jan. 5-11, 10 cases, with 5 deaths in the district, mainly in Samarang.
Samarang.....	Oct. 4-24.....	57	23	
Do.....	Jan. 5-Mar. 15.....	906	202	
Surabaya.....	Mar. 16-29.....	2	1	
Egypt:				
Alexandria.....	Dec. 9-Apr. 22.....	53	13	
Cairo.....	Nov. 12-Apr. 1.....	29	6	
Port Said.....	Dec. 3-31.....	1	1	
France:				
Marseille.....	Nov. 1-Mar. 31.....		23	
Nantes.....	Jan. 5-Mar. 31.....	8		
Nice.....	Feb. 1-28.....	2		
Paris.....	Dec. 1-May 3.....	56	1	
Germany.....				Total: Nov. 24-30, 5 cases not included in report, p. 2231, vol. xxvii, Dec. 1-May 3, 67 cases.
Breslau.....	Jan. 19-25.....	1		
Hamburg.....	Jan. 10-Mar. 29.....	4		
Kehl.....	Feb. 1-28.....		1	
Gibraltar.....	Dec. 9-Mar. 16.....	3	1	
Great Britain:				
Hull.....	Mar. 8-Apr. 1.....	5		
Liverpool.....	Jan. 4-Apr. 26.....	4	1	
London.....	Apr. 27-May 3.....	1		
Newcastle on Tyne.....	Feb. 9-15.....	15		
Sheffield.....	Feb. 26-Mar. 2.....	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1912, to May 30, 1913—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Greece:				
Athens.....	Feb. 10-Apr. 5....	1	3	Epidemic.
Patras.....	Mar. 3-Apr. 27....		38	
Piræus.....	Jan. 1-Mar. 13....	119	49	
Hawaii: Paauhau.....	May 2.....	1		
Honduras: Trujillo.....	Feb 2-8.....	1		
India:				
Bombay.....	Nov. 17-Apr. 19....	250	106	
Calcutta.....	Dec. 1-Mar. 8.....		27	
Karachi.....	Dec. 1-Apr. 12....	70	23	
Madras.....	Dec. 1-Apr. 19....	49	11	
Moulmine.....	Feb. 23-Mar. 1....	1		
Rangoon.....	Oct. 1-Feb. 22....	55	15	
Indo-China: Saigon.....	Aug. 20-Dec. 23....	3	3	
Italy:				
Leghorn.....				Year 1912: Cases, 315; deaths, 19.
Naples.....	Mar. 16-29.....	4	1	
Palermo.....	Dec. 15-Apr. 12....	40		
Turin.....	Feb. 3-Mar. 2.....	5		
Japan.....				Total, year 1912: Cases, 14; deaths, 1.
Hokkaido.....	Jan. 1-31.....	1		
Nagasaki.....	Nov. 1-Apr. 27....	5	3	
Taiwan (Formosa).....				Year 1912: Cases, 4.
Kangawaken.....	Jan. 1-31.....	1		
Yokohama.....				Jan. 1-13, 2 cases from s. s. Pera from London via ports.
Malta.....	Feb. 1-28.....	1		
Mexico.....				Feb. 16: Cases, 1,500 to 2,000, with 10 per cent of deaths; mainly along the western coast. Jan. 30-Feb. 16: Present in Aguierrre, Cajame, Corral, Esperanza, Navojca, Puga, and Tarin.
Aguascalientes.....	Dec. 9-May 11....		51	Many fatal cases.
Cananea.....	May 22.....			
Chihuahua.....	Dec. 9-Apr. 13....		24	
Durango.....	Dec. 1-Mar. 31....		157	
Guadalajara.....	Jan. 5-May 3.....	32	3	
Hermosillo.....	Feb. 16-May 10....	23		
Juarez.....	Mar. 1-29.....	2		
Manzanillo.....	May 7.....			2 cases among troops.
Mazatlan.....	Jan. 1-7.....	2		
Mexico.....	Nov. 17-Mar. 8....	118	43	
Monterey.....	Mar. 24-Apr. 20....		5	
Nogales.....	May 23.....	3		
Salina Cruz.....	Nov. 17-May 3....	17	7	
San Luis Potosí.....	Sept. 15-Mar. 15....	9	3	
Sonora—				
Aguia Zarca.....	Jan. 30.....	2		
Nogales.....	do.....	1		
Tamaulipas, State.....	Apr. 16.....			Epidemic in Chamal, 100 miles north of Tampico.
Veracruz.....	Jan. 26-Apr. 5....	13	1	
Netherlands: Rotterdam.....	Dec. 22-28.....		1	1 case imported from Pasco del Macho. Apr. 13-May 3: Cases, 28; deaths, 4.
Newfoundland: St. Johns.....	Feb. 23-May 17....	17		
Peru:				
Callao.....	Sept. 1-14.....			Present.
Lima.....	do.....			
Mollendo.....	Nov. 24-Dec. 7....	5	1	
Salaverry.....	Dec. 4-11.....	1		
Philippine Islands: Manila.....	Dec. 21.....			1 case removed from s. s. Maulban to the San Lazaro Hospital. Third quarter, 1912: Cases, 9; deaths, 0. Fourth quarter, 1912: Cases, 16; deaths, 0.
Portugal: Lisbon.....	Dec. 1-Apr. 26....	52		
Roumania.....				Total, Oct. 1-31: Cases, 6.
Russia:				
Batoum.....	Dec. 1-31.....	1		
Libau.....	Dec. 16-Apr. 20....	5		
Moscow.....	Dec. 8-Apr. 12....	43	10	
Odessa.....	Nov. 17-Apr. 12....	9	3	
St. Petersburg.....	Nov. 24-Apr. 12....	126	18	
Warsaw.....	Sept. 22-Feb. 1....	43	40	
Riga.....	Dec. 1-31.....	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1912, to May 30, 1913—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Russia—Continued.				
Siberia—				
Omsk.....	Jan. 1-27.....	7	.....
Vladivostok.....	Dec. 15-28.....	4	1	
Do.....	Jan. 1-13.....	4	.....
Servia: Belgrade.....	Dec. 22-28.....	2	.....
Siam: Bangkok.....	Nov. 10-Mar. 22.....	.....	11	
Spain:				
Almeria.....	Dec. 1-31.....	.....	40	
Do.....	Jan. 1-Mar. 31.....	.....	22	No longer epidemic.
Barcelona.....	Dec. 1-May 10.....	.....	211	
Cadiz.....	Nov. 1-Dec. 31.....	.....	7	
Do.....	Feb. 1-Mar. 31.....	.....	2	
Madrid.....	Nov. 1-Dec. 31.....	.....	34	
Do.....	Jan. 1-Apr. 30.....	.....	87	
Malaga.....	Dec. 1-31.....	.....	1	
Seville.....	do.....	.....	27	
Do.....	Jan. 1-Mar. 31.....	.....	27	
Valencia.....	Nov. 14-May 10.....	138	4	
Straits Settlements:				
Singapore.....	Nov. 24-Apr. 5.....	16	5	
Penang.....	Mar. 31-Apr. 5.....	1	.....
Sweden: Stockholm.....	Oct. 8-21.....	3	.....	Apr. 13-26, 27 cases.
Switzerland:				
Cantons—				
Aargau.....	Dec. 15-Apr. 5.....	7	.....
Basel.....	Nov. 14-Apr. 19.....	45	.....
Grisons.....	Dec. 1—Feb. 1.....	15	.....
Luzerne.....	Apr. 13-19.....	1	.....
St. Gall.....	Apr. 16-22.....	.....	1	
Turkey in Asia:				
Adana.....	Apr. 26.....	.....	.....	Present.
Beirut.....	Dec. 8-Apr. 26.....	96	14	
Damascus.....	Mar. 8.....	.....	.....	Do.
Mersina.....	Mar. 9-May 3.....	110	69	
Smyrna.....	Nov. 24-Dec. 14.....	.....	5	
Do.....	Jan. 19-Mar. 22.....	.....	11	
Tarsus.....	Apr. 12-26.....	.....	.....	Do.
Trebizond.....	Mar. 9-15.....	.....	.....	Do.
Turkey in Europe:				
Constantinople.....	Dec. 1-28.....	.....	43	
Do.....	Dec. 29-May 3.....	.....	161	
Salonika.....	Apr. 21-May 4.....	4	7	
Union of South Africa: Durban.....	Feb. 2-8.....	1	.....	Imported.
Uruguay:				
Montevideo.....	Dec. 1-31.....	3	.....	Last previous case in May, 1912.
Do.....	Jan. 1-Feb. 28.....	3	1	Feb. 18, present.
West Indies:				
Barbados.....	Mar. 8.....	1	.....	From Grenada.
Grenada.....	.....	.....	.....	May 8, 3 cases, in vicinity of St. Georges.
Concord.....	Apr. 23.....	1	.....
La Filette.....	do.....	1	.....
Pomme Rose.....	Apr. 17.....	3	.....
Zanzibar.....	Nov. 8-Feb. 7.....	22	3	



SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

MICHIGAN.

Mental Defectives—Sterilization of Those in Public Institutions to Prevent Procreation (Act No. 19, Apr. 1, 1913).

SECTION 1. Authority is given to the management of any institution maintained wholly or in part by public expense, in whose custody may be held individuals who have been by a court of competent jurisdiction adjudged to be and who are mentally defective or insane, to render incapable of procreation, by vasectomy or salpingectomy or by the improvement of said surgical operation which is least dangerous to life and will best accomplish the purpose, any person who is mentally defective or insane.

SEC. 2. The boards of the aforesaid institutions and the physicians or surgeons in charge of each of said institutions shall for each of their respective institutions constitute a board the duty of which shall be to examine such inmates of said institutions as are reported to them by the warden or medical superintendent to be persons by whom procreation would be inadvisable. Such board shall receive the report of insanity experts hereinafter mentioned, examine the physical and mental condition of such persons and their record and family history so far as the same can be ascertained, and if in the judgment of a majority of said board procreation by any such person would produce children with an inherited tendency to insanity, feeble-mindedness, idiocy, or imbecility, and there is no probability that the condition of such person so examined will improve to such an extent as to render procreation by any such person advisable, or if the physical or mental condition of any such person will be substantially improved thereby, then said board shall direct a competent physician or surgeon, with such other assistants as may be necessary, to perform the operation of vasectomy or salpingectomy or any other operation or improvement on vasectomy or salpingectomy recognized by the medical profession, as the case may be, upon such person. Such operation shall be performed in a safe and humane manner, and the board making such examination and the institution physician or surgeon shall receive no extra compensation therefor: *Provided*, That at least 30 days' notice shall be given to the parents or guardian of such person before the performing of such operation, said notice to specify the purpose, time, and place of such examination: *Provided further*, That when said parents or guardian object to the performance of such operation, then the question of the sanity of such person shall be referred to the probate court of the county in which the institution is located, where the question of the sanity and the necessity for this operation shall be determined as in other insane cases before such courts.

SEC. 3. In case an institution has no physician at its head, authority is given to the board of managers to cause such operation to be performed, to hire expert physicians to examine and report on the condition of the subject, and to perform the

operation, with such other assistants as may be necessary: *Provided*, That before said operation is ordered there shall first be secured from two physicians having qualifications prescribed by law for examiners in insanity a written statement or report that such operation is desirable in the interests of the patient or the good of the community: *And provided further*, That these physicians shall be allowed for their services the compensation fixed by statutes for the examination and certification of an insane person. The several sums necessary to carry out the provisions of this act shall be certified to be correct by the respective boards and shall be paid out of the general fund of the State upon the warrant of the auditor general.

SEC. 4. In relation to each individual person sterilized under the provisions of this act, the board of control of the institution in which said person is an inmate shall file with the State Board of Public Health of Michigan a written record setting forth the name, age, sex, nationality, type, or class of mental defectiveness of said person, the nature of the operation performed, the subsequent mental and physical condition as affected by said operation: *Provided*, That said records shall not be for public inspection, but may be open to inspection of the members of the board of control of the aforesaid institutions and of the members of the immediate family of the person operated upon, or any physician or surgeon designated by them.

SEC. 5. Except as authorized by this act, every person who shall perform, encourage, assist in, or otherwise promote the performance of either of the operations described in section 1 of this act for the purpose of destroying the power to procreate the human species, or any person who shall knowingly permit either of such operations to be performed upon such person, unless the same shall be a medical necessity, shall be guilty of a felony, and upon conviction thereof shall be fined not more than \$1,000 or imprisoned in the State prison not more than five years, or both, in the discretion of the court before whom the said person or persons were so convicted.

Nuisances—Abatement of (Act No. 71, Apr. 22, 1913).

SECTION 1. Section 10 of chapter 35 of the Revised Statutes of 1846, entitled "Of the preservation of the public health; quarantine, nuisances, and offensive trades," being compiler's section 4419 of the Compiled Laws of 1897, is hereby amended to read as follows:

"SECTION 10. If the owner or occupant shall not comply with such order of the board of health, such board may cause the said nuisance, source of filth, or cause of sickness to be removed and all expenses incurred thereby shall be paid by the said owner of such premises. If the owner of said premises shall refuse on demand of said board of health to pay such expenses so incurred, any sums so paid shall be assessed against such property and shall be collected and treated in the same manner as are taxes assessed under the general laws of the State. If the occupant or any other person shall have caused or permitted said nuisance to exist he shall be liable to the owner of said premises for any amount so paid by such owner or assessed against said property, which amount shall be recoverable in an action at law."

Waterworks and Sewage-Disposal Systems—Supervision and Control by State Sanitary Engineer (Act No. 59, Apr. 22, 1913).

SECTION 1. The State board of health is hereby given supervisory and visitatorial power and control as limited in this act over all corporations, both municipal and private, partnerships, and individuals engaged in furnishing water to the public for household or drinking purposes, and over the plants and systems owned or operated by such municipal or private corporations, partnerships, or individuals. The word "corporation," as hereinafter used in this act, shall be taken to mean and include municipal corporations as well as private corporations.

SEC. 2. The State board of health, its agents and representatives, shall have the power and authority to enter upon, at all reasonable times, the pumping plants, filter-

ing plants, reservoirs, standpipes, cribs, and other property of such corporations, partnerships, or individuals for the purpose of inspecting the same and carrying out the authority vested in them by this act.

SEC. 3. The State board of health shall have authority to make and enforce such rules and regulations as it may deem necessary governing and providing a method of conducting and operating the entire or any part of the systems of waterworks, including the filtration plants owned or operated by such corporations, partnerships, or individuals, and may make and enforce penalties for the noncompliance with such rules and regulations; and said board shall, in addition to the other powers vested in it, whenever it shall deem it necessary for the protection of health, have authority, to direct such corporations, partnerships, or individuals operating waterworks systems to cleanse any portion of such systems as it may deem necessary and to operate the same in such manner as to furnish pure and wholesome water and to enforce such directions by rule or regulations.

SEC. 4. Whenever the mayor of a city, president of a village, supervisor of a township, health officer, or representative of the State board of health has reason to believe that the water furnished by any corporation, partnership, or individual is contaminated, then it shall be the duty of the State board of health, upon the request of such officer, to investigate the same and to determine by laboratory analysis the condition of said water, and the certificate of the State bacteriologist, showing result of such analysis, shall be prima facie evidence of the matters stated in such certificate and also as to the source of the water and the time and place of taking, and of all matters that may be stated in said certificate.

SEC. 5. The expenses of the investigation and analysis made by the State board of health shall be borne by the locality and shall be paid for at the rate of \$5 per day and necessary traveling expenses while making such investigation and analysis, and shall constitute a charge against the city, village, or township asking for such investigation, the said per diem to be covered into the State treasury to the credit of the State board of health laboratory fund in addition to the amount already appropriated.

SEC. 6. It shall be the duty of the mayor of each city, the president of each village, and of all private corporations, partnerships, or individuals now or hereafter operating waterworks systems in this State, to file with the State board of health a true and correct copy of the plans and specifications of the entire system owned or operated by such corporation, partnership, or individual, including such filtration or other purification plant as may be operated by them in connection therewith, and also plans and specifications of all alterations, additions, or improvements to such systems which may be made from time to time. The plans and specifications herein referred to shall, in addition to all other things, show all the sources through or from which water is or may be at any time pumped or otherwise permitted or caused to enter into such system. Such plans and specifications shall be certified by the mayor and city engineer of city corporations, by the president and engineer, if one is employed, for village corporations, and by such proper officer and the engineer employed by a private corporation for private corporations, and by some individual member of a partnership, or by the individual owner in case of waterworks owned and operated by partnerships or individuals, including the engineer employed, if any. If within 60 days after any corporation, partnership, or individual shall commence to operate, or within 60 days after any alterations, additions, or improvements shall be made by such corporation, partnership or individual, and municipal officer or other person whose duty it is to file the same under the provisions of this act, shall willfully fail to file a copy of the plans and specifications as provided herein, or shall knowingly file false or incomplete copies of such plans and specifications, such officer or person shall be deemed guilty of a misdemeanor, and shall be subject to a fine of not less than \$25 and not more than \$100, or to imprisonment in the county jail not more than 30 days, or to both such fine and imprisonment, and in addition thereto shall be

subject to a penalty of \$25 for each and every day such person or officer shall fail or neglect to file such plans and specifications, which penalty may be collected in any court of competent jurisdiction on the complaint of any member of the State board of health, and it shall be the duty of the attorney general to prosecute such complaint, and any penalties recovered shall be deposited in the general fund of the State.

SEC. 7. The words "plans and specifications" as used in this act shall be construed to mean a true description or representation of the entire system operated by such corporation, partnership, or individual as the same shall be actually in use at the time of filing the same, and also a full and fair statement of how the same is operated: *Provided*, That any corporation, partnership, or individual that has already filed with the State board of health such plans and specifications as are required by section six of this act, shall not be required to file such plans and specifications.

SEC. 8. In case of corporations, partnerships, or individuals operating filtration plants in which there are beds or other appliances to be cleansed, it shall be the duty of such corporations, partnerships, or individuals to file with the State board of health an annual report under oath on or before the first day of January in each year, showing the dates on which and the number of times such beds or appliances were cleansed during the preceding year. Such report shall be sworn to by any municipal officer or person acquainted with the facts and employed by such corporation, partnership, or individual at the time of making said report. Any person making a false statement in such annual report shall be deemed guilty of and be subject to the penalty of perjury.

SEC. 9. Any corporation other than municipal, any partnership company or individual, or any officer of any municipal corporation having the duty imposed upon him by this act, who shall violate any provision of this act where no other penalty is provided therein, shall be guilty of a misdemeanor and shall be punished therefor as provided by law.

SEC. 10. It shall be the duty of the State board of health, on receipt of the plans and specifications of such waterworks systems, to inspect the same with reference to their effect upon the public health, and if such board on such inspection finds that the public water supply of any such city or village is impure and dangerous to individuals or to the public generally, the said board on its order may require the corporation, partnership, or individual owning and operating the same to make such alterations in such waterworks systems as may be required or advisable in the opinion of said board, in order that the water supply may be healthful and free of pollution. Such recommendations or orders of the State board of health shall be served in writing upon such corporations, partnerships, or individuals, and it shall thereupon be the duty of such corporations, partnerships, or individuals to comply with such recommendations or orders.

SEC. 11. The State board of health shall have the same power of visitation, inspection, direction, and control over the sewage-disposal systems of the cities and villages of this State as is herein given with respect to the waterworks systems. The mayor of each city and the president of each village shall file with the secretary of the State board of health, on or before the 1st day of January, 1914, a true and correct description of the entire sewerage system owned by the municipality. It shall be the duty of the State board of health, on receipt of such plans and specifications, to inspect the same with reference to their effect upon the public health, and if such board on such inspection finds that such sewerage systems or any parts thereof are dangerous to individuals, or to the public health generally, the said board on its order may require such alterations in such systems as may be required or advisable in the opinion of such board: *Provided*, That nothing herein contained shall be construed to grant any power to prevent any municipality now disposing of its sewage into any river from continuing so to do. Such recommendations or orders shall be served in writing

upon the clerk of the city or village, and thereupon it shall be the duty of such city or village to make such alterations, changes, or additions to its sewerage system as shall have been so recommended or ordered by said board. Such orders may be reviewed or enforced by any court of chancery or other court having jurisdiction.

SEC. 12. The State board of health is hereby authorized and empowered to employ a sanitary engineer, who shall be known by the title of State sanitary engineer, who shall give his full time, under the direction of the State board of health, to the visitation, inspection, and investigation of the waterworks systems, sewage-disposal systems, garbage-disposal systems in the cities and villages of this State, and to such other matters as the State board of health may direct. He shall be paid a salary of a sum not to exceed \$3,000 per annum, and his expenses for traveling and clerk hire, under the direction of the State board of health, to be paid out of the general fund of the State, the same to be audited as provided by law on the approval of the secretary of the State board of health. He shall at all times be subject to the orders of and removal by the State board of health.

SEC. 13. Act No. 28 of the public acts of 1909 is hereby repealed.

Ophthalmia Neonatorum—Prevention of (Act No. 88, Apr. 29, 1913).

SECTION 1. It shall be the duty of the State board of health to officially name and approve a prophylaxis to be used in treating the eyes of newly born infants, and it shall be the duty of the board to publish instructions for using the same.

SEC. 2. It shall be the duty of any physician, nurse, or midwife who shall assist and be in charge at the birth of any infant, or have care of the same after birth, to treat the eyes of the infant with a prophylaxis approved by the State board of health; and such treatment shall be given as soon as practicable after the birth of the infant and always within one hour; and if any redness, swelling, inflammation, or gathering of pus shall appear in the eyes of such infant or upon the lids or about the eyes within two weeks after birth, then any nurse, midwife, or other person having care of the infant shall report the same to some competent practicing physician within six hours of its discovery.

SEC. 3. Any failure to comply with the provisions of section 2 of this act shall be punishable by a fine not to exceed \$100 or imprisonment in the county jail not to exceed six months, or both such fine and imprisonment, in the discretion of the court.

SEC. 4. Act No. 43 of the public acts of 1895, approved March 29, 1895, the same being compiler's sections Nos. 4475 and 4476 of the Compiled Laws of 1897, is hereby repealed.

NEW JERSEY.

Tuberculosis—Prevention of the Spread of (Reg. St. Bd. of H., Mar. 11, 1913).

1. All persons suffering from pulmonary tuberculosis (consumption) shall effectively destroy their sputum (spit).

2. All persons suffering from running sores due to any form of tuberculosis shall burn all soiled dressings immediately after removal.

3. The room occupied by a tuberculosis patient shall have at least one outside window.

4. No person suffering from pulmonary or other communicable form of tuberculosis shall prepare, cook, or handle food for the use of others, except in certain cases when some member of a family may be allowed to do certain culinary work under the supervision of the proper health authorities.

5. The manufacturing of any kind of goods for commercial purposes or the performance of any work known as "shop work" in the home of any person suffering from pulmonary or other communicable form of tuberculosis is prohibited, unless the product is such as can be sterilized, and unless sterilization is done in strict accordance with the requirements of the local board of health.

PORTO RICO.**Tuberculosis—Appropriation for Prevention of the Spread of (Act Feb. 25, 1913).**

SECTION 1. That the sum of \$10,000 be, and the same is hereby, appropriated, out of any funds in the insular treasury not otherwise appropriated, to be expended under the direction of the Anti-Tuberculosis League in connection with their hospital and sanitarium in Porto Rico, or in otherwise combating the spread of tuberculosis.

SEC. 2. That upon the recommendation of the insular board of health the governor shall appoint a physician, duly authorized to practice his profession in Porto Rico, to attend the intercolonial conference on the subject of tuberculosis in the West Indies, to be held at Port of Spain, Trinidad, March 25, 1913.

SEC. 3. The physician so appointed shall receive no compensation for his services, but shall be allowed a sum not exceeding \$800, payable from the appropriation for the Anti-Tuberculosis League, to cover the expenses that such delegate may incur in attending such convention.

SEC. 4. That the auditor of Porto Rico be, and is hereby, authorized and instructed to audit all accounts under the provisions of this act and to provide rules and regulations for the same.

SEC. 5. All laws or parts of laws in conflict herewith are hereby repealed.

SOUTH DAKOTA.**Common Towels—Prohibiting the Use of in Public Places (Reg. No. 17, St. Bd. of H., Feb. 28, 1913).**

The use of roller towels or any large towel which may be used for more than one service shall not be permitted in any hotel, schoolhouse, restaurant, boarding house, saloon, clubhouse, or public lavatory or wash room, nor in any public or private place where a number of people congregate in the State of South Dakota; but instead the owners, proprietors, managers, or other persons in charge of such places shall provide a sufficient quantity of individual towels of any fabric approved by the board of health, so that each person shall have a clean one for his own use.

VERMONT.**Local Health Officers—Fees and Allowances (Act No. 215, Jan. 11, 1913).**

SECTION 1. Section 5456 of the Public Statutes is hereby amended so as to read as follows:

"SEC. 5456. For each report of a contagious disease, said health officer shall receive from the town for which he acts 15 cents; for each biennial report, \$1; and for sanitary inspection, placarding, quarantining, and disinfection of infected buildings and premises, the same as for ordinary professional services, unless he is employed for a stipulated salary. When called by the State board of health to attend a meeting of said board, he shall receive from the State his expenses and the same per diem as members of the State board."

Factories and Workshops—Authority of State Board of Health to Prescribe Regulations for the Heating and Ventilation of (Act No. 216, Jan. 11, 1913).

SECTION 1. The State board of health shall have authority to prescribe regulations for the heating and ventilation of all mills, factories, stone sheds, sheds, or other buildings in which five or more persons are employed.

Notice of the promulgation of any order or regulation made by the State board of health pursuant to the provisions of this act shall be communicated in writing to the owner, manager, or person in charge of the mill, factory, stone shed, shed, or other building concerning the ventilation and heating of which the order or regu-

lation is made, and a copy of such order shall be kept on file by the secretary of the State board of health.

SEC. 2. The court of chancery shall have jurisdiction and power, upon application thereto by the State board of health or a party interested, to enforce its orders or the orders, rules, and regulations of said board in the premises and to restrain the use and occupation of the premises until the orders, rules, and regulations of said board are complied with.

Venereal Diseases—Notification of (Act No. 218, Feb. 3, 1913).

SECTION 1. Commencing on the date of the passage of this act the superintendent or other officer in charge of public institutions such as hospitals, dispensaries, clinics, homes, asylums, charitable and correctional institutions, shall report promptly to the State board of health the name, sex, age, nationality, race, marital state, and address of every charitable patient under observation suffering from venereal diseases in any form, stating the name, character, stage, and duration of the infection, and, if obtainable, the date and source of contracting the same.

SEC. 2. Physicians shall furnish similar information concerning private patients under their care, except that the name and address of the patient shall not be reported.

SEC. 3. All information and reports in connection with persons suffering from such diseases shall be regarded as absolutely confidential, and shall not be accessible by the public nor shall such records be deemed public records.

SEC. 4. The State board of health shall provide, at the expense of the State, facilities for the free bacteriological examination of discharges for the diagnosis of gonorrheal infections, and also shall provide, at cost, vaccines or antitoxins for the treatment of such infections. And said board shall make, at the expense of the State, the Wasserman test or examine smears for the diagnosis of syphilis; and shall furnish the treatment known as "Salvarsan" or other accredited specific treatment at cost. But such diagnosis and treatment shall not be furnished until the data required for the registration of the case has been furnished by the physician or institution treating the patient.

SEC. 5. The State board of health shall include in bulletins or circulars distributed by it information concerning the diseases covered by this act.

Tuberculosis—Treatment of Indigent Patients (Act No. 219, Jan. 30, 1913, as Amended by Act No. 220, Feb. 13, 1913).

SECTION 1. The governor shall, by virtue of his office, be commissioner of indigent tuberculous persons, and as such commissioner shall constitute the board and shall biennially report to the general assembly his doings under this act, with an account of his expenditures.

* * * * *

SEC. 4. The selectmen of the town or the mayor of the city may execute in their official capacity in behalf of their respective towns or cities, without a previous vote, the bond which may be required to be given by the town or city to indemnify the State against expenses which may accrue in consequence of the clothing or transportation of beneficiaries from such town or city.

SEC. 5. When a person is designated a beneficiary, the town or city in which he resides shall defray the expenses of his conveyance to and from the institution in which he is sent for treatment, and shall provide necessary clothing.

SEC. 6. The beneficiaries specified in this act shall receive treatment in the Vermont Sanitarium at Pittsford or a similar institution.

SEC. 7. The sum of \$5,000 is hereby annually appropriated for the purpose of carrying out the provisions of this act.

SECTION 1. Section 3 of an act entitled "An act relating to the care of indigent tuberculous persons," approved January 30, 1913, is hereby amended so as to read as follows:

"SEC. 3. The governor may designate beneficiaries under this act and shall direct the time when and the place where a beneficiary shall be treated, and the auditor of accounts shall draw orders for such treatment upon the certificate of the governor, and the governor may, in his discretion, take a bond to indemnify the State against expenses which accrue in consequence of the clothing or transportation of a beneficiary."

SEC. 2. Section 2 of an act relating to the care of indigent tuberculous persons approved January 30, A. D. 1913, is hereby amended so as to read as follows:

"SEC. 2. A person wishing treatment under this act shall be examined by two reputable physicians licensed to practice in this State, and such physicians shall, immediately after such examination, make a report in writing of their findings to the selectmen of the town or the mayor of the city in which such person resides. The selectmen of the town or the mayor of the city shall then investigate the financial condition of the person applying for treatment, and if such person is found worthy of treatment under this act, shall make a complete report of their findings, together with the report of the physicians, to the governor."

WYOMING.

Quarantine—Penalty for the Breaking of (Act Feb. 26, 1913).

SECTION 1. That section 2950 of chapter 192 be amended and reenacted so as to read as follows:

"SEC. 2950. *Breaking of quarantine.*—Any person or persons confined in any quarantine established in this State under the provisions of this chapter who shall escape therefrom or attempt to escape therefrom, without having been dismissed upon the certificate or authority of the county health officer, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than \$25 nor more than \$500 or by imprisonment not more than one year in the county jail, or by both such fine and imprisonment."

Births—Reporting of (Act Feb. 26, 1913).

SECTION 1. That section 2960 of the Wyoming Compiled Statutes of 1910 are hereby amended and reenacted so as to read as follows:

"SEC. 2960. *Birth certificates.*—It shall be the duty of every physician or midwife attending upon the birth of a child, or in the absence of such physician or midwife, the father, a relative, the householder, or superintendent of the institution in which such birth occurred, within 10 days thereafter, to file with the local registrar of the district in which such birth occurred, a certificate of the same properly made out in ink upon the standard blank, setting forth the true and correct information called for by such standard blank certificate. For each such certificate properly filed the party filing the same shall receive 25 cents, to be paid annually by the county commissioners upon the presentation of a proper claim approved by the State registrar. When necessary a supplemental report of the Christian name of the child can be made by the parent."

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

CHICAGO, ILL.

Rabies—Animals Suffering from, to be Reported—Restraint of Dogs (Ord. July 15, 1912).

SECTION 1. That Chapter XX of the Chicago Code of 1911 be amended by adding after section 777 thereof the following sections:

"777 (a). It shall be the duty of every veterinarian or other person who discovers any dog or other animal to be suffering with rabies to report immediately the fact to the commissioner of health, which report shall give the name, if known, the place of residence of person owning or harboring said dog, the place where the dog can be found, and the license number of said dog, if known: *Provided*, That such dog or other animal shall be immediately taken up and impounded in the manner provided in section 777 of this ordinance, and securely kept until the commissioner of health can make or cause to be made an examination of said dog or other animal; and, if upon such examination it shall be determined that said dog or other animal is suffering with rabies, said animal shall be immediately killed. Every person violating any provision of this section or neglecting or refusing to comply with any of the provisions hereof shall be fined not less than \$10 nor more than \$200 for each offense.

"777 (b). That it shall be unlawful for any owner or keeper of a female dog to permit the same to run at large during the time said female dog is in heat, and said owner or keeper must keep said female dog securely chained or housed during the period of heat: *Provided*, That any person violating any provision of this section or neglecting or refusing to comply with any of the provisions hereof shall be fined not less than \$5 nor more than \$200 for each offense."

CHICOPEE, MASS.

Foodstuffs—Care and Sale of (Reg. Bd. of H. May 17, 1912).

No person shall expose, sell, or offer for sale for human food any meat, vegetables, poultry, candy, fruits, berries, or shelled nuts outside of any building, or in any open window or doorway, or upon any alley, street, or sidewalk in the city of Chicopee, unless such food is covered with glass or other clean material, or so placed as to be protected from dust, flies, animals, or other contaminating influence.

No person shall sell or offer for sale or have in his possession with intent to sell for human consumption any unwholesome or decayed fruit, berries, vegetables of any kind whatever, or any tainted, diseased, or decayed meat, fish, or adulterated food.

Meats or other products as named above shall not be carried through any street, private way, or public place unless properly protected from dust and flies.

Every person, firm, or corporation being the occupant or lessee of any room, building, or place where meat, poultry, game, fish, confectionery, baker products, or any article for human food shall be kept, sold, or offered for sale, shall maintain such room, building, or place and its appurtenances in a clean and sanitary condition, subject at all times to meet the approval of the board of health.

Every peddler of food products from wagons or carts, in addition to coverings as provided for in the above regulations, shall keep in his wagon or cart a suitable receptacle for the waste of his business. Such waste to be disposed of in a manner that shall not create a nuisance.

No person, firm, or corporation, individually or by their agents or employees, shall transport meat, fish, or poultry of any kind through the public streets or ways of the city except in wagons or vehicles which have been thoroughly washed at least once in 24 hours, and kept in a clean and sanitary condition.

The agent of the board of health of the city shall from time to time inspect all stores, places, receptacles, and vehicles where foodstuffs are kept or being transported for sale and ascertain if foodstuffs are in a pure and wholesome condition, and if store, place, or vehicle is kept in a clean and sanitary manner, and may seize and destroy any and all of such foodstuffs made, deposited, or offered for sale, or transported contrary to the provisions of these regulations.

Any person, firm, or corporation violating any provision of these rules shall be deemed guilty of a misdemeanor, and upon conviction shall be fined not less than \$5 nor more than \$200 for each and every offense.

COLUMBUS, OHIO.

Milk and Milk Products—Production, Care, and Sale (Reg. Bd. of H., Mar. 29, 1912).

MILK.

SECTION 1. Permits.—No one shall engage in the sale of milk or cream in the city of Columbus, Ohio, ship same into the city for sale, or supply to others for use in the city, unless he shall first obtain a permit from the board of health so to do.

No person or persons shall sell, offer for sale, or have in possession with intent to sell, any milk or cream from any dairy which has not a permit from this office, or for which there has not been filed, with the chief inspector, an application to sell such milk.

A fee of \$1 will be charged for each permit, and the same shall be credited to the sanitary fund. Permits shall be renewed annually in January. Permits issued after July 1 shall be charged at the rate of 50 cents for each permit for use only during the second half of the year. On or before the 1st day of January permits will be issued by the board of health for the ensuing year to all applicants who comply with the provisions of these rules and regulations regulating the sale of milk or cream in the city of Columbus, but before the issuance of any permit every vender or shipper of milk or cream shall make application therefor upon a printed form, provided by the board for that purpose, on which shall be stated:

1. The name, residence, post-office address, and location of the business place or places of the applicant.
2. The number of cows from which milk is obtained for sale, and the kind of food which the cows are given.
3. If the applicant buys part or all his milk supply, the names and addresses of all persons from whom he obtains milk or cream.
4. If the applicant be a shipper of milk or cream into the city he shall, in addition to the above, state the route of his shipments.

SEC. 2. Inspections for permits.—The board will not issue any permit unless it is satisfied, after inspection, with the cleanly and sanitary condition of the stables, cows, wagons, store, or place of business of the applicant therefor, and with all the utensils used by him from which his milk or cream is obtained; and that the food given the cows is pure and wholesome, and that all persons engaged in the care and handling of the milk are free from any contagious diseases, and that said persons use due cleanliness in their work.

SEC. 3. *Applications for permits.*—All applications for permits shall be signed by the applicant, and when received by the dairy inspector shall be placed on file, and the name of such applicant shall be entered in a book of registration kept for such purpose. As soon as possible, after an application is received at the health office for a permit to sell milk, the dairy inspector shall visit the dairy or place of business of such applicant, and make such observation, and gather such information as will enable the board to properly consider such application. Should the dairy or place of business of such applicant be located more than 80 miles from the city of Columbus, he shall either furnish a certificate of qualification of all dairies from which it is proposed milk be obtained, according to the requirements of the sanitary code, made by some State or municipal sanitary authority, acceptable to the board, or pay the cost and expense of making such inspection by the health department; and for such purpose there shall be deposited by said applicant, with the clerk of the board, an amount sufficient to cover the estimated cost of such inspection, based upon a compensation to the inspector of \$4 per day, and the necessary expenses of the inspector in going to and from the place of inspection, and while engaged therein; any surplus of said deposit, not required for said purposes, to be returned to the applicant when the permit is issued; and any deficiency in such amount to be paid by said applicant when the permit is issued.

SEC. 4. (a) *Revoking permits.*—If after issuing a permit to sell milk or cream the board of health shall become satisfied that the provisions of this subdivision of the sanitary code are being violated, it will at once revoke the permit issued to such person or persons and no new permit will be issued until all insanitary conditions have been rectified and all other provisions of this subdivision of the sanitary code are complied with.

(b) Anyone doing business under a permit from the board of health who shall change the location of such business without notifying the health office of such change shall have such permit revoked without further notice.

SEC. 5. *Milk tickets.*—If dairymen or other persons offering milk for sale use tickets as representatives of value, these tickets must be in coupon form and must be destroyed after once using.

SEC. 6. *The stable and surroundings.*—The surroundings to the stable must be kept in a sanitary condition. Cows must not be allowed to stand in manure and filth.

SEC. 6. (a) All parts of stable except floors and windows must be painted in some light color or whitewashed at least twice a year. Stables must be kept free from dirt, dust, cobwebs, and odor. Manure and urine must be removed from stable at least twice daily, and if not taken to field daily must be moved at least 30 feet from stable and placed where cows can not get into it. Manure must not be thrown out through stable windows. If horses are kept in same stable, a tight partition should separate them from cattle. No other animals or fowls will be allowed in cow stable. Floors must not be laid less than 1 foot higher than outside surface level, so that good drainage can be procured; floors must be constructed of asphalt, concrete, brick with surface flushed with cement, or of wood, water-tight. They must be kept in good repair at all times, and also constructed with a gutter not less than 12 inches wide and 6 inches deep, a 4-foot walk back of cows, and not less than 20-inch manger in front. (Front half of cow stall may be made of clay.)

Ceiling must be dust tight and kept free from cobwebs.

Light.—At least 3 square feet of unobstructed window glass must be provided per cow and equally distributed; at least 500 cubic feet of space must be provided for per cow; windows must be left partially open, if no other method of ventilation is provided for. Stable yard must be well drained and kept clean.

SEC. 7. Cows must be kept clean; manure litter, etc., must not be allowed to become caked and dried on them. They must not be allowed to stand in nor wade through filth and manure. The bedding must be kept sweet and clean at all times and of sufficient quantity to protect the animals from lying in filth.

SEC. 8. Feed and water.—Cows must be fed on clean, dry feed, neither decayed, moldy, dusty, distillery waste, nor starch waste. If malt is fed it must not be fed when sour.

Pure running spring water or ordinary well water, free from contamination, pumped in clean tanks, must be provided.

SEC. 9. Milkers.—The milkers must thoroughly wash and wipe their hands and the cows' udders before they begin milking. They must not use pails, cans, strainers, etc., unless they have been thoroughly washed in hot water and soap, or hot water and soda, and afterwards sterilized with boiling water or steam. Care must be taken that the seams of the vessels are thoroughly cleaned with a brush. They must refrain from milking or handling milk in any way when in themselves or their families there is even a suspicion of any contagious or infectious disease, such as smallpox, scarlet fever, diphtheria, typhoid fever, tuberculosis, or the like.

SEC. 10. Handling the milk.—Immediately after milking, the milk shall be removed from the stable into a milk room screened from flies and other insects, aerated and cooled to at least 65° F., and put into perfectly clean bottles or cans. Dairymen who use both bottles and cans in delivering milk shall not fill bottles while on their delivery route.

SEC. 10. (a) All dairies must be supplied with a milk room, constructed as follows:

(a) Not directly connected with any building used as a living or sleeping room, or in which animals are kept, and 50 feet away from any hog pen or privy vault.

(b) Tight floor, well drained.

(c) Interior painted or whitewashed in good condition.

(d) All openings kept screened during fly time.

(e) A rack platform located in some exposed place, where all utensils must be placed to air and sun.

SEC. 11. Milk receptacles.—It shall be the duty of all persons having in their possession bottles, cans, or other receptacles containing milk or cream, which are used in the transportation and delivery of milk or cream, to clean, or cause them to be thoroughly cleaned, immediately after emptying.

No person shall use, or cause to allow to be used, any receptacle which is used in the transportation and delivery of milk or cream for any purpose whatsoever other than the holding of milk or cream; nor shall any person receive or have in his possession any such receptacle which has not been washed after holding milk or cream, or which is unclean in any way.

SEC. 12. Quality of milk.—No person shall bring into the city for sale, or shall sell or offer for sale any milk:

(a) Containing more than "88 per cent" of water or fluids.

(b) Containing less than "12 per cent" of milk solids.

(c) Containing less than "3 per cent" of milk fats.

(d) From which any part of the cream has been removed.

(e) Having a specific gravity of less than 1.029.

(f) Containing any dirt, foreign matter, or sediment.

(g) Containing any boracic or salicylic acid, formaldehyde, or other foreign chemicals.

(h) Containing any pathogenic bacteria.

(i) Containing bacteria of any kind, more than 500,000 per cubic centimeter.

(j) Drawn from any cow having a communicable disease or showing clinical symptoms of tuberculosis, or from a herd which contains any diseased cattle, or are afflicted with or have been exposed to any communicable disease.

(k) Drawn from any cow within 15 days before or 12 days after parturition.

(l) Drawn from any cow which has been fed on garbage, refuse, swill, moist distillery waste, or other improper food.

(m) Having a temperature, or which has been kept as a temperature higher than 65° F.

(n) Which has existed or has been kept under conditions contrary to the provisions of this code.

(o) No milk shall be kept, sold, or offered for sale drawn from cows suffering with sore and inflamed udders and teats, or from cows diseased.

Provided, That the subdivisions *a*, *b*, *c*, and *d* of this section shall not apply to milk sold under the name of "skimmed milk."

SEC. 14. *Skimmed milk*.—(a) No person shall bring into the city for sale, or sell, or offer for sale, milk from which the cream has been removed, either in part or in whole, unless on two sides of the container from which such milk is sold there appear in red letters, not less than 1 inch in height, the words "Skimmed milk."

(b) No person shall bring into the city for sale, or sell, or offer for sale, any so-called skimmed milk containing less than 9.3 per cent of milk solids.

SEC. 15. *Storage*.—No person shall ship or store any milk in any basement, cellar, refrigerator, milk house, dairy, or other place, unless such place have at least one square foot of window space to each 8 square feet of floor, with a water-tight floor, properly drained, and shall contain a vat made of nonabsorbent material large enough to store all milk. Windows and doors shall be provided from May 1 to October 1, inclusive, with sound screens of mesh sufficiently fine to keep out flies and other insects.

(b) No person shall store any milk in any basement, cellar, refrigerator, milk house, dairy, or other place which is within 50 feet of any water-closet or privy vault or cess-pool, or any horse or cow stable, or any chicken or poultry yard or coop.

SEC. 16. *Milk-delivery wagons*.—(a) No one shall use any vehicle for the delivery of milk in the city of Columbus which has not painted thereon in legible Roman letters not less than 3 inches in height, and on both sides of the vehicle in a conspicuous place, the name and location of his dairy and the number of his permit and if such vender sells skimmed milk each and every container of skimmed milk shall have the words "Skimmed milk" thereon in plain letters not less than 1 inch in height.

(b) Every person using in the sale or distribution of milk a delivery wagon or other vehicle shall keep the same at all times in a cleanly condition and free from any substance liable to contaminate or injure the purity of the milk, and from May 1 to October 1 shall have and keep over such delivery wagon or other vehicle a covering of canvas or other material, so arranged as to thoroughly protect the contents thereof from the rays and heat of the sun.

SEC. 17. *Sealed container—Wholesale delivery*.—No person or dealer shall sell, offer for sale or deliver any milk, buttermilk, whey, sour milk, skimmed milk, cream, Dutch cheese, or other milk products in quantities exceeding 1 gallon unless the can or receptacle containing the same is securely sealed by lock and chain, wire or other contrivance equally efficient: *Provided, however*, That the persons or dealer engaged exclusively in the wholesale delivery or sale of milk, buttermilk, whey, sour milk, cream, skimmed milk, Dutch cheese, or other milk products from wagons not carrying milk for retail customers, may deliver the same from unsealed cans or receptacles: *And provided further*, That said wagon or wagons shall have inscribed conspicuously thereon in plain letters, not less than 3 inches in height, the words "Wholesale delivery."

SEC. 18. *Original container*.—No person or milk dealer shall sell, deliver, or offer to sell, or keep for sale in stores, milk or cream, in quantities less than 1 gallon, unless delivered and kept in the original package or container. (Exception: Original packages of not greater capacity than 1 quart may be broken for sale if the unsold portion is kept in the original package, properly closed.) The compartment where milk or cream is kept shall be separated by an impervious water and odor-proof par-

tition from all other compartments of any ice box or refrigerator; neither milk nor cream shall be kept in the same compartment with any other foodstuffs except butter.

SEC. 19. *Retail milk.*—No person, firm, or corporation shall give, furnish, sell or offer for sale, or deliver, any milk, buttermilk, whey, sour milk, skimmed milk, or cream, in quantities less than 1 gallon, except in sanitary bottles, sealed with a suitable cap or stopper, and except where the milk is sold at the milk house or dairy, when the same may be dipped (and the dipped milk shall not be carried on any street in any other than a covered vessel).

No person or persons shall transfer any milk intended for sale from one can, bottle, or receptacle into another can, bottle, or receptacle, on any street, alley, or thoroughfare, or upon a delivery wagon or other vehicle, or in any exposed place in the city of Columbus, except in a creamery, milk depot, or in the inclosed premises of the customer of the dealer in milk.

SEC. 20. *Name of bottlers of milk to appear on the package.*—It shall be unlawful for any person, firm, or corporation to sell within the city of Columbus any milk or cream in bottles or glass jars unless each of said bottles or glass jars shall have indelibly indicated upon the cover or cap thereof, in a legible and conspicuous manner, the name of the person, firm, or corporation bottling said milk or cream in such bottles or glass jars.

SEC. 21. *Milk plants or creameries.*—Floors must be of water-tight construction, laid so as to allow ready drainage. Walls and ceilings shall be smooth, tight, and kept painted in some light color or lime washed. Such room shall have at least 1 square foot of window space to every 8 square feet of floor space. It shall be a building which is not used for any other purpose than the handling and storing of milk, and shall not connect by door or window with any other compartment, and the portion thereof used for washing bottles and utensils shall be separate from the portion used for the storage of milk by a sound partition which shall reach to the ceiling, and such milk plant or creamery shall at all times be kept absolutely clean and sanitary, and articles unnecessary for the care and handling of the milk shall not be kept in such building, nor shall any article other than milk or its products be stored there, or offered for sale therefrom. Equipment must be arranged and constructed so it can be easily and efficiently cleaned; all piping used to convey milk must be of the sanitary "take-down" form. Windows and doors, from May 1 to October 1, must be provided with sound screens of mesh sufficiently fine to keep out flies and other insects. Building and equipment must be kept clean at all times and free from odors.

SEC. 22. *Contagious diseases.*—(a) Should scarlet fever, smallpox, diphtheria, typhoid fever, tuberculosis, or other dangerous or infectious disease occur in the family of any dairyman or among any of his employees, or in any house in which milk is kept for sale, or in the family or among the employees of any person who ships milk into the city for sale, such dairyman, such venders, or shippers of milk shall immediately notify the health officer of the facts of the case, and the health officer shall at once investigate and order the sale of such milk stopped, or sold under such regulations as he thinks proper.

(b) Should dairymen, venders, or shippers of milk fail to notify the health officer when contagious diseases exist in their families or in the families of their employees, or who, after such information is given the health officer, fail to obey his directions, the milk and dairy inspector shall seize and destroy all milk sent into the city by such persons, and shall, when acting in good faith, be held harmless in damages therefor in any suit or demands made.

(c) In delivering milk to families in which there exists any of the above-named contagious or infectious diseases, the dairyman shall not enter, neither shall he permit any of his milk bottles or vessels to be taken into such houses, but shall pour such milk as each family wishes into vessels furnished by such family.

SEC. 23. *Milk Inspectors.*—The milk or dairy inspector, the health officer, or any person authorized by the board of health, may examine all dairy herds, utensils for handling milk of all dairymen, or other persons engaged in selling or shipping for sale milk or its products to the city of Columbus, Ohio. These inspectors shall have power to open any can, vessel, or package containing milk, or any of its products, whether sealed, locked, or otherwise, or whether in transit or otherwise, and take samples of the contents for testing or analysis; and if upon inspection the milk or milk products are found to be filthy, if the cans or other containers are in an unclean condition, or any milk or cream has a temperature higher than 65° F., if the milk or cream has been produced in violation of any section of this code, he may then and there condemn such milk or milk products and pour the contents of such cans or other containers upon the ground forthwith; and he shall, if done in good faith, be held harmless in damages thereof in any suit or demand made.

CREAM.

No person shall bring into the city for sale or shall sell or offer for sale any cream unless such cream is produced from milk which must conform to all the rules and regulations of this code relating to milk nor unless such cream be kept at or below 65° F., free from foreign substances, and shall not contain more than 1,000,000 bacteria per cubic centimeter, and shall not contain less than 16 per cent of milk fat.

ICE CREAM.

SEC. 24. *Ice cream.*—No person, firm, or corporation, or any servant, agent, or employee thereof, shall sell, offer for sale, expose for sale, or have in possession with intent to sell, ice cream adulterated within the meaning of this resolution.

SEC. 25. Ice cream shall be deemed adulterated within the meaning of this resolution:

First. If it shall contain boracic acid, benzoate of soda, formaldehyde, saccharin, or any other added substance or compound of copper, iron oxide, ochres, or any coloring substance except the harmless vegetable colors and cochineal, carmine, and except the following mineral colors:

Red shades: Armaranth, Ponceau, 3 R.; Erythrosin, orange 1.

Green shade: Light green, S. F.

Yellow shade: Naphthol, yellow S.

Blue shade: Diasulpho acid.

Second. If it shall contain any deleterious flavoring matter or flavoring matter not true to name.

Third. If it is an imitation of or offered for sale under the name of another article.

Fourth. If it is made of milk or milk products from sources uninspected by the Columbus Board of Health or from sources not qualified according to section 3, this code.

SEC. 26. Nothing in this resolution shall be construed to prohibit in the manufacture of ice cream the use of fresh eggs and not exceeding one-half of 1 per cent of pure gelatine, gum tragacanth, or other vegetable gums of quality approved by the board of health of the city of Columbus.

SEC. 27. No ice cream shall be sold within the city of Columbus which contains over 0.25 per cent acidity.

SEC. 28. When fruits or nuts are used in the manufacture of ice cream the fruit shall be sound, clean, and mature; the nuts shall be sound and nonrancid.

SEC. 29. All utensils used in the handling or sale of ice cream shall be of nonabsorbent material, free from rust or corrosion, constructed in such a manner as shall be easily cleaned and sterilized, and kept clean at all times.

SEC. 30. Any building, room, or premises in which ice cream is manufactured or handled shall have at least 1 square foot of window space for every 8 square feet of floor space; a water-tight, sound floor, well sloped and drained, and the walls and ceilings shall be plastered or ceiled and maintained in sound condition; walls and ceilings shall be kept painted some light color or whitewashed. Such buildings shall at all times be kept absolutely clean and sanitary, and articles unnecessary for the manufacture and handling of ice cream shall not be kept therein, nor shall any article other than milk or its products be stored there or offered for sale therefrom. No building or room in which ice cream is manufactured, handled, or stored shall be within 50 feet of any water-closet, privy, chicken coop, stable, or building in which domestic animals are kept; the doors, windows, and all other openings, during fly season, shall be fitted with self-closing screen doors, unless a sufficient number of revolving fans are provided to keep the room free from flies.

SEC. 31. No person, firm, or corporation shall sell, offer for sale, or deliver any ice cream or other frozen-milk products upon any street, alley, or thoroughfare, or any exposed place in the city of Columbus, except in the original package or container.

SEC. 32. It shall be unlawful to refreeze ice cream.

SEC. 33. It shall be unlawful for any person suffering from any contagious or infectious disease to engage in the manufacture, preparation, or sale of ice cream.

Penalty.—Whoever violates or obstructs or interferes with the foregoing rules and regulations shall be fined in any sum not exceeding \$100, or imprisoned for any time not exceeding 90 days, or both, but no person shall be imprisoned for any violation or failure to obey any of the rules and regulations for a first offense.

These rules and regulations shall be in force and effect from and after the earliest period allowed by law.

Meat—Slaughtering, Inspection, Care, and Sale (Reg. Bd. of H., Apr. 12, 1912).

SECTION 1. It shall be unlawful for any person, firm, or corporation to sell, have, keep, or expose for sale for human food, or have in possession the flesh or meat-food products of any cattle, calves, sheep, swine, or goats, unless the same shall have been slaughtered or prepared under the supervision of a United States Government inspector in accordance with the regulations regulating the inspection of meat as prescribed by the Department of Agriculture of the United States, or under the supervision of an inspector of the health department of the city of Columbus in accordance with provisions of this regulation.

SEC. 2. It shall be unlawful for any person, firm, or corporation to sell, have, keep, or expose for sale, or have in possession the flesh or meat-food products of any cattle, calves, sheep, swine, or goats, unless there has been placed on each primal part, package, or container thereof, by and under the personal supervision of an inspector of the United States, or of the city of Columbus, a mark, stamp, or brand showing that the same has been inspected and passed for food purposes by the United States Department of Agriculture, or passed for food purposes by the city of Columbus, and having the words "Inspected and passed, Columbus Board of Health," together with the number of the inspector, as hereafter provided, by whom the same was inspected.

SEC. 3. *Application for permits.*—The proprietor or operator of each slaughtering, packing, meat canning, rendering, or similar establishment engaged in the slaughtering of cattle, calves, sheep, swine, or goats, or in the packing, canning, or other preparation of any food product into which the meats or meat-food products of said animals enter, either in whole or in part, for Columbus market, shall make application to the board of health for a permit so to do. The said application shall be made in writing, addressed to the secretary of the board of health, and shall state the location of the establishment, the address of the owner or authorized agent of the same, the kind of animals slaughtered, the day and hour of slaughtering, the time per day consumed in

slaughtering, the estimated number of animals of any species slaughtered per day and week, or the estimated amount of meats or meat-food products received from other establishments, and the character, quantity, and proposed disposition of the products of said establishment. (Blank application forms will be furnished, upon request, by the secretary of the board of health.) Upon filing of such application with the said board of health, the chief inspector, or any inspector designated by him, shall inspect said establishment, and if same shall be found to comply with the provisions of this regulation relative to the construction, equipment, and cleanliness of such establishments, a permit shall be issued. Said permits shall be issued free of charge and renewed annually in January.

SEC. 4. Refusing or revoking permits.—The board of health may refuse to grant such permit and may revoke the same when granted and refuse inspection if the applicant or person to whom the permit was issued does not comply with the rules and regulations now in force or that may hereafter be adopted by the board of health for the slaughter of meat or preparation of meat food products.

SEC. 5. Fee for inspection.—Should the establishment desiring inspection be located more than 1 mile from the city limits the person or persons desiring inspection shall pay for such inspection, as follows:

First. Inspection shall be charged at the rate of 60 cents per hour, but no charge shall be made for less than three hours at any one inspection; the same includes the time in traveling both ways between the health office and place of inspection.

In case the inspector should visit more than one establishment before returning to the city, each place visited shall pay their share on the time consumed by the inspector in traveling from the health office to and from the place or places to be inspected.

In case the services of an inspector are required at any one establishment for an average of one-half day or more for each and every day of the week, the same shall be charged to said establishment at a regular rate of \$110 per month. All fees shall be payable one-half on the 15th day and one-half on the last day of each and every month during the time which such inspection is furnished. Bills shall be rendered and made payable at the office of the city auditor. Funds so collected shall be credited to the sanitary emergency meat inspection fund.

Second. Owners of establishments slaughtering calves, sheep, or goats may, upon presenting a permit from the board of health to slaughter animals for consumption in this city, receive inspection at the following places:

First. At any establishment where inspection is permanently established.

Second. At the inspection booth in Central Market at the following time: Tuesdays, 5.30 to 8.30 a. m.; Thursdays, 5.30 to 8.30 a. m.; Saturdays, 5.30 to 10.30 a. m.

Third. At the inspection booth in North Market at the following time: Mondays, Wednesdays, and Saturdays, at from 7.30 to 9 a. m., providing the carcasses presented for inspection are dressed as follows:

(a) Calves shall have the head, lungs, heart, liver, navel, and kidneys attached to the carcass by natural attachments.

(b) Sheep and goats shall have the liver, lungs, heart, and kidneys attached by the natural attachments.

All carcasses presented shall be inspected and passed or condemned according to the provisions of this regulation.

Fourth. If the fees herein provided are not paid promptly upon the day when the same become due under the terms of this regulation, an action shall be commenced in a court of competent jurisdiction against the person, firm, or corporation in default to recover the amount due, and no inspection shall be furnished to the person, firm, or corporation so in default until the whole amount due, together with costs, is paid to the city of Columbus.

SEC. 6. Any person, firm, or corporation desiring to slaughter any cattle or swine, the flesh of edible products of which is to be sold for food in the city of Columbus, shall give notice to the chief inspector of said city at least 24 hours before such slaughtering is to take place that the services of an inspector thereof will be required.

SEC. 7. The person in charge of the slaughtering shall notify the inspector in charge at the close of each day at what time on the following day the work of slaughtering will be commenced, and if no slaughtering is to be done on the day following, then he shall notify the inspector at what time and on what succeeding day the work of slaughtering will be next commenced.

SEC. 8. The days and parts of days during which the work of slaughtering any animals mentioned in this regulation may be done shall be fixed by agreement between the holder of the permit for such slaughtering and the chief inspector, and in case an agreement can not be had the health officer is hereby empowered to designate the time at which such slaughtering shall be done. All slaughtering shall be done with reasonable speed, the character of the establishment being considered.

SEC. 9. The slaughtering of cattle and swine shall be conducted on week days between the hours of 6.30 a. m. and 5.30 p. m., except in certain cases of emergency, when permission to slaughter may be granted by the chief inspector; or except in the case of injury or other extraordinary cases when it is necessary to kill animals out of established hours, in which case the carcasses of all such animals, with the viscera attached, and all other parts identifiable, shall be held for inspection and duly identified by the inspector or his assistants at the establishment, with a signed statement from the manager of the abattoir, stating the number of each head of animals so slaughtered. No animals shall be slaughtered on Sundays, except in cases of emergency, without permission of the chief inspector; such permission to be obtained 24 hours in advance.

SEC. 10. *Badges.*—Each employee of the health department engaged in inspection under these regulations will be furnished with a numbered badge, which he shall wear on the left breast on the outer clothing while in the performance of his official duties, and which shall not be allowed to leave his possession. The number of his badge must correspond with the number of the stamp which he uses to mark inspected and passed carcasses.

SEC. 11. *Office room.*—Where the work of an establishment is sufficient to demand the entire time of an inspector, the proprietors of said establishment shall furnish an office room, including heat and light, rent free, for the exclusive use of the inspector and other employees of the department on duty at such establishment. Such room shall be properly lighted and ventilated, and provided with lockers for storage of supplies and clothing.

SEC. 12. *Bribery.*—It shall be considered a misdemeanor, punishable by instant dismissal, for any department employee engaged in the performance of his duty under these regulations, to receive or accept from any person, firm, or corporation engaged in the sale of meat or meat-food products in the city of Columbus any gift, money, or other thing of value given with any purpose or intent whatsoever.

SEC. 13. *Sanitation.*—No permit shall be issued to any person, firm, or corporation to engage in the business of slaughtering animals for use for food purposes in the city of Columbus unless the establishment in which the same are to be slaughtered shall conform strictly to the following regulations:

(a) All floors must be water-tight, kept in good repair, and so constructed that they can be readily flushed and drained.

(b) All rooms except the coolers and cellars to have at least 1 square foot of window space for every 8 square feet of floor space.

(c) The side walls of all killing rooms, when not constructed of brick, stone, concrete, or smooth matched lumber well painted, shall be covered with nonabsorbent material to a height of 3 feet above the floor.

(d) All rooms except the cooler shall be screened with a screen sufficiently fine to keep out flies and other insects from May 1 to October 30.

(e) Ceilings, walls, and pillars shall be painted some light color, or limewashed at least twice yearly. (Exception: The lower 4 feet of all walls, pillars, etc., may be painted some dark color.)

(f) All trucks, trays, and other receptacles, all chutes, floors, platforms, racks, tables, etc., and all knives, saws, clevers, and other tools, and all utensils and machinery used in moving, handling, cutting, chopping, mixing, canning, or other processes, shall be thoroughly cleaned daily, if used.

(g) Cuspidors must be placed on all floors and in all departments wherever killing or handling of meat is done, which employees who expectorate shall be required to use. Cuspidors shall be regularly and effectively cleaned daily. Butchers and other employees must not smoke while handling or dressing meats. Nor shall the manager or person in charge of such establishment allow or permit smoking in any room where meats are being handled.

(h) People suffering from any communicable disease shall not be knowingly employed in any slaughterhouse.

(i) All employees must at all times be clean in habits and attire.

(j) Stacks shall be separated from all rooms where meats are handled or stored by a tight partition. Such pens shall have a tight floor, well drained, and must be kept clean. No horse stable shall be maintained within 15 feet of any room used for handling or storing meats, and when such stable is maintained in the same building the intervening partitions shall be of tight sound construction.

(k) Proper toilet facilities for employees, including washstands with hot water, and sanitary closets must be provided.

(l) All blood, offal, manure, etc., must be removed from region of slaughterhouse daily, and either burned, buried, or disposed of in a manner suitable to the chief inspector. Tanks for blood and offal must be made of nonabsorbent material, and shall be kept covered with a tight-fitting cover. If offal is fed, it must not be fed within 200 feet of killing room or any room where the meats are handled or stored.

(m) Meats must not be laid on cooler floors to cool, but may be laid on racks suitable to the chief inspector.

(n) The aprons, smocks, or other clothing of employees who handle meat in contact with such clothing shall be of a material that is readily cleansed and made sanitary, and shall be cleansed daily, if used. Employees who handle meat or meat-food products shall be required to keep their hands clean.

(o) Butchers who dress diseased carcasses shall cleanse their hands of all grease and then immerse them in a prescribed disinfectant and rinse them in clear water before engaging again in dressing or handling healthy carcasses. All implements used in dressing diseased carcasses shall be cleaned of all grease and then sterilized and rinsed in clear water or by immersion in a prescribed disinfectant and rinsed in clear water before being again used in dressing healthy carcasses. Facilities for such cleansing and disinfection, approved by the inspector in charge, shall be provided by the establishment. Separate trucks, etc., shall be furnished for handling diseased carcasses and parts; following the slaughter of an animal infected with an infectious disease a stop shall be made until the implements have been cleansed and disinfected unless duplicate implements are provided.

(p) Due care must be taken to prevent meat and meat-food products from falling on the floor; and in the event of them having so fallen, they must be condemned, or the soiled portions removed and condemned.

(q) Carcasses or parts of carcasses shall not be inflated with air from the mouth, and no inflation of carcasses except by mechanical means shall be allowed. Carcasses shall not be dressed with skewers, knives, etc., that have been held in the mouth. Skewers shall be cleansed before being used again. Spitting on whetstones or steels when sharpening knives shall not be allowed.

(r) In each establishment a cooler or room separate from the killing room must be provided for the storage of dressed meats. Said room must be painted some light color or lime-washed thoroughly clean, well ventilated, and kept free from flies.

(s) Dogs must not be allowed to enter any room or place where meats are slaughtered, handled, or stored.

ANTE-MORTEM EXAMINATION AND INSPECTION.

SEC. 14. (a) When possible an ante-mortem examination shall be made of all cattle, sheep, calves, swine, and goats about to be slaughtered before they shall be allowed to enter an establishment at which inspection is maintained. Said examination and inspection shall be made in the pens, alleys, or chutes of the establishment at which the animals are about to be slaughtered. The proprietors of the establishments at which the said ante-mortem inspection is conducted shall provide satisfactory facilities for conducting said inspection and for separating and holding apart from healthy animals those showing symptoms of disease.

(b) All animals showing symptoms of being affected with any disease or condition which under these regulations would probably cause their condemnation when slaughtered shall be marked by affixing to the ear or tail a metal tag bearing the words "Columbus rejected," and a serial number.

(c) All such animals, except as hereinafter provided, shall be slaughtered separately, either before regular slaughter has commenced or at the close of the regular slaughter, and shall be duly identified by a representative of the establishment to the inspector on duty on the killing floor before the skins are removed or the carcasses opened for evisceration.

(d) All animals which have been tagged for pregnancy and which have not been exposed to any infectious or contagious disease are not required to be slaughtered; but before any such animal is removed from the establishment the tag shall be detached by a department employee and returned, with his report, to the inspector in charge.

(e) If any pathological condition is suspected in which the question of temperature is important, such as Texas fever, anthrax, pneumonia, blackleg, or septicemia, the exact temperature should be taken. Due consideration, however, must be given to the fact that extremely high temperatures may be found in otherwise normal hogs when subjected to exercise, and a similar condition may obtain to a less degree among other classes of animals. Animals termed as "downers," or crippled animals, shall be tagged in the abattoir pens for the purpose of identification at the time of slaughter and shall be passed upon in accordance with these regulations.

POST-MORTEM INSPECTION AT TIME OF SLAUGHTER.

SEC. 15. (a) A careful inspection shall be made of all animals at the time of slaughter. The head, tongue, tail, thymus gland, and all viscera, and all parts and blood used in the preparation of meat food or medical products shall be retained in such manner as to preserve their identity until after post-mortem examination has been completed, in order that they may be identified in case of condemnation of the carcass. Suitable racks or metal receptacles shall be provided for retaining such parts.

(b) Carcasses and parts thereof found to be sound, healthful, wholesome, and fit for human food shall be passed and marked as provided in these regulations.

(c) Should any lesion or disease or other condition be found, it shall be judged in accordance with the regulations relating to the inspection of meat as prescribed from time to time by the Department of Agriculture of the United States.

(d) Carcasses, parts of carcasses, or other meat food products held for final examination or disposal shall be marked by placing on such carcass, part of carcass, or

other meat food product thereof a tag bearing the words "Columbus Board of Health, retained," and no person other than an inspector or employee of the health department shall remove such tag.

(e) All condemned or retained carcasses and parts shall be disposed of only in the presence of an inspector of the health department, and the report of the disposition shall be made by him upon the blank form provided therefor.

TANK ROOMS, TANKS, AND TANKING.

SEC. 16. (a) All tanks and equipment used for rendering and preparing edible products shall be in compartments separate from those used for rendering inedible products, and there shall be no connection by means of pipes, or otherwise, between the tanks or departments containing inedible products. This provision shall be complied with on or before October 1, 1912.

(b) All condemned carcasses, parts of carcasses, and meat-food products shall be tanked as follows:

(c) After the lower opening and draw-off valves of the tank have been securely sealed by an employee of the department and the condemned carcasses, parts, and meat-food products are placed therein in his presence, the upper opening shall be likewise securely sealed by such employee, whose duty it shall be then that a sufficient force of steam (not less than 40 pounds, producing a temperature of 288° F.) is turned into the tanks and maintained a sufficient time (not less than six hours) effectually to render the contents unfit for any edible product. Wire and lead seals are provided by the department for sealing tanks. Proprietors of establishments are required to equip all tanks used for condemned products so that they may be securely sealed in the manner above specified.

(d) A sufficient quantity of coloring matter or other substance to be designated by the department shall be used in connection with the rendering of all condemned carcasses, parts of carcasses, meat, or meat-food products to destroy them effectually for food purposes.

(e) The seals of tanks containing condemned meat or the tankage thereof shall be broken only by an employee of the department, and such employee shall supervise the drawing off of the contents of such tanks and the marking of the tallow and grease as inedible.

(f) If the establishment fails to permit the treatment and tanking of condemned carcasses, parts of carcasses, meat, or meat-food products as required by these regulations, the inspector in charge shall report that fact to the department, in order that inspection may be withdrawn from such establishment.

(g) Any meat or meat-food products condemned at establishments which have no facilities for tanking shall be freely slashed with a knife and then denatured with crude carbolic acid or other prescribed agent, and then removed from the establishment.

SEC. 17. It shall be the duty of the meat inspector, and he is hereby empowered, to enter any place where the meat or flesh of any animal mentioned in this regulation, or the products thereof, may be stored, held, kept, exposed or offered for sale, and every establishment where meat is manufactured into articles of food, or preserved, cured, canned, or otherwise prepared for food, and shall inspect the same, and whenever such meat or flesh shall, upon inspection and examination, be found not to be marked, stamped, or branded, showing that the same has been inspected and passed for food purposes by the United States or by the city of Columbus as in this regulation provided, the said inspector shall condemn the same as unfit for human food and dispose of it according to the provision of this regulation.

SEC. 18. Any complaint made against the decision of an assistant meat inspector, or any condemnation, must be filed with the chief inspector, whose decision shall be final in all cases.

SEC. 19. It shall be unlawful for any person or persons to willfully resist, obstruct, abuse, or interfere with any inspector or member of the food-inspection force of this city while such inspector or member of the food-inspection force is engaged in the execution of his duties as such inspector or member of the food-inspection force. Any person violating the provisions of this section shall, upon conviction, be fined not less than \$5 nor more than \$50, or imprisoned not more than 30 days, or both, for each and every offense.

SEC. 20. It shall be unlawful for any person, firm, or corporation, except the meat inspectors herein provided for, to have in possession, keep, or use any mark, stamp, or brand provided or used for marking, stamping, or branding any article herein required to be marked, stamped, or branded. It shall be unlawful for any person, firm, or corporation to have in possession, keep, make, or use any mark, stamp, or brand having thereon a device or words similar in character or import to the marks, stamps, or brands provided or used for marking, stamping, or branding such articles.

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